

PROPOSED DUNOON DAM

Preliminary Cultural Heritage Impact Assessment

For

Rous Water

May 2013

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Abbreviations

AHIP:	Aboriginal Heritage Impact Permit
AHPDD:	Site designation for Ainsworth Heritage Proposed Dunoon Dam site
DECCW:	Department of the Environment Climate Change and Water (now the EPA)
EPA:	Environmental Protection Agency (formerly DECCW)
EP&A Act:	NSW Environmental Planning and Assessment Act
EPBC Act:	Commonwealth Environmental Protection and Biodiversity Conservation Act
EPRG:	Environmental Protection and Regulation Group
GSI:	Ground Surface Integrity
GPR:	Ground Penetrating Radar
GSV:	Ground Surface Visibility
Heritage Act:	NSW Heritage Act
ICOMOS:	International Committee for Monuments and Sites
LALC:	Local Aboriginal Land Council
LEP:	Lismore City Local Environment Plan
NNTT:	National Native Title Tribunal
NP&W Act:	NSW National Parks and Wildlife Act
OEH:	Office of the Environment and Heritage
PAD:	Potential Archaeological Deposit

EXECUTIVE SUMMARY

Rous Water commissioned Ainsworth Heritage to undertake the Proposed Dunoon Dam Preliminary Heritage Impact Assessment (the assessment), in order to assist them in determining the viability of the site for a dam as part of Rous Water's *Future Water Strategy* and provide the basis for future environmental impact assessment reporting. This summary outlines the structure, aims, site location and methodology of the assessment.

The Dunoon Dam proposal would involve the construction of a new on-stream water storage on Rocky Creek, downstream of the existing Rocky Creek Dam. The dam would be approximately 2.5 kilometres west of the village of Dunoon, from which it takes its name.

The Assessment aimed to ensure that Rous Water:

- Understands the likely impacts on cultural heritage of the proposed dam;
- Ensures the assessment provides a clear picture of heritage and its likely constraints, should the proposal proceed to the environmental impact assessment stage;
- Assists in the development of the concept design;
- Assess whether the proposed Dunoon Dam is a viable future water supply option;
- Meets their statutory obligations;
- Identify and provide an initial assessment of the significance of known, and any potential, cultural heritage;
- Assists Rous Water in developing an effective and beneficial relationship with the local aboriginal groups;
- Ensures that any input from the Aboriginal community is recorded;
- Develops preliminary management recommendations which will assist in minimising impact on any heritage significance;
- Outlines procedures and statutory requirements which will assist in minimising impact on any significant archaeological resources; and
- Ensures that sound preliminary management guidelines are developed for any works that may impact upon the significance of any cultural heritage.

The assessment reviewed the history of the Dunoon area, both Aboriginal and non-Aboriginal, showing that settlement of the area was undertaken first by the Widjambul people of the Bundjalung Nation, who were then displaced from the land by white settlers. The arriving white settlers first cleared and then cultivated the land for various crops, a process that has continued to the current day.

Consultation was undertaken with both the Rous Water Project Reference Group and the Aboriginal Community, where several groups identified themselves for consultation. Although only two groups attended the field survey, all registered groups have been kept apprised of the ongoing project and were invited to provide comment and input on the draft report.

Based on the information gleaned from the research phase of the assessment, a field survey was undertaken which sought to identify and record both Aboriginal and Non-Aboriginal sites. Thirteen Non-aboriginal sites were located, which were assessed to have varying significance of a local nature. The most notable sites were the Depression era causeway and the Fraser Road and McPherson Homesteads.

Sixteen Aboriginal sites were located, consisting of scarred trees, grinding grooves, artefacts and a collection of 25 burials. The collection of Aboriginal sites together is generally of State significance, allowing assumptions on how the Widjabul utilised and accessed the valley over time. The following table summarises the sites located, their initially assessed significance and the anticipated unmitigated impact upon them should the dam proceed to development.

Site No.	Name	Significance	Anticipated Unmitigated Impact
S 14T(5)(b), S 14T(5)(e)	Displaced Groove	Local	Total
	Small Groove	Local	High
AHPDD ^{S 14T(5)}	Grind stone and flake	Local	Total
S 14T(5)(b), S 14T(5)(e)	Groove	Local	Total
	Sandstone Marker	Local	Total
	Blade Core	Local	Total
AHPDD ^{S 14T(5)}	Boulder Scar	Local	Total
S 14T(5)(b), S 14T(5)(e)	Basalt Marker	Local	Total
	Burials	State	Total
AHPDD ^{S 14T(5)}	Deep Scar	Local	High
AHPDD ^{S 14T(5)}	Scar	Local	High
AHPDD ^{S 14T(5)}	Indeterminate Scar	Local	High
S 14T(5)(b), S 14T(5)(e)	Basin 1	Local	Total
	Dual Grooves	Local	High
	Basin 2	Local	Total
AHPDD201	Lower Fraser Rd Homestead	Local	Total
AHPDD202	Sheds	None	NA
AHPDD203	Causeway	Local	Total
AHPDD204	1980s Bridge	None	NA
AHPDD301	Possible Camp	None	NA
AHPDD401	Footings	None	NA
AHPDD402	Dairy Bales	None	NA
AHPDD501	The Channon Showgrounds	Local	Some
AHPDD502	Abattoir	Local	Some
AHPDD503	Old Rocky Creek Bridge	None	NA
AHPDD504	Munroe Rd Homestead	None	NA
AHPDD505	McPherson Homestead	Local	Some
AHPDD204	Whian Whian Falls	Local	Some

Table 1: Significance and Impact on sites. Sites in red were queried as to their authenticity by the Hobbs report (see Appendix C), but were recorded at the request of the Site's Officer.

However, large sections of the dam area were inaccessible due to a combination of thick vegetation and steep terrain in conjunction with inclement weather patterns. The recommendations of the assessment have outlined where additional research will be required to ensure that any future impact is properly assessed and mitigated if the proposed dam is to go ahead.

Due to the nature of the proposed development, the vast majority of sites will undergo high impact which will result in the loss of most of the sites unless mitigation measures are put in place. As part of the review of the draft report, the views of both the Aboriginal Stakeholders and the wider community was sought in order to ensure that the management and mitigation measures, largely concerned with recording and recovery, are undertaken in

consultation and conjunction with the relevant stakeholders. This is in accordance with OEH guidelines and will provide much greater certainty for the recommendations and conclusions of the report.

Following the draft report review the following conclusions were made in conjunction with the Aboriginal people:

- The proposed Dunoon Dam is a major regional water supply infrastructure project that is likely be considered as State Significant Infrastructure under the *Environmental Protection and Assessment Act 1979* (EP&A Act). Any assessment undertaken in NSW, with the potential to impact cultural heritage, is subject to NSW legislation i.e. EP&A Act, NPW Act. As such, the major heritage requirements for any development of the proposed Dam are those relating to Aboriginal heritage and would be guided by OEH's recommendations to the Director General, which would follow standard OEH requirements;
- Local Aboriginal stakeholders have been identified and consulted through a two year long process, started through contact with Government Departments for information regarding groups and followed by newspaper advertisements, direct mail and phone calls to determine those stakeholders who wished to be involved. Eventually, five groups and several individuals were identified, with some being highly involved in the process, whilst others were happy to merely be kept apprised of the ongoing process. The consultation process has been inclusive and rigorous and has gone beyond that required by OEH for such processes;
- The current study has identified a number of significant Aboriginal cultural heritage values and sites. These include: the burials (25) located as a group in the [REDACTED] of the proposed dam site; several stone artefacts; scarred trees; and grinding grooves. The most significant site located was the burial ground, with the other sites not rare in their own right, but contributing to the picture of Aboriginal use of the valley over time;
- Additional investigations into the burials, determined that the site has a high probability of being a burial ground, therefore any future work that disturbs the burial site will require, an AHIP permit, unless undertaken as part of a Part 5.1 development under the EP&A Act, as the site is now registered with AHIMS. In order to disturb the site, appropriate research questions and detailed consultation, undertaken by a qualified Archaeologist and with full participation of the registered stakeholders, would be required. Such a research excavation will need to be sufficiently resourced and provided with adequate time, to ensure that the excavation is undertaken in detail, but with all care and respect, due to the sensitivity of this work. This course of action should only be undertaken should the proposed Dunoon Dam be considered necessary to secure the regional water supply;
- Aboriginal stakeholders are currently of the opinion that the sites should remain undisturbed and that no level of disturbance is considered acceptable to them, especially when concerned with impacts upon the burials, which they see serving as a direct link to the ancestors of the registered stakeholders. The other sites located are also considered significant as a collection, showing a clear pattern of use for the valley by Aboriginal people over time;
- Should Rous Water wish to seek statutory approval to construct and operate the proposed Dunoon Dam, it would need to satisfy the Director-General of Planning

NSW as to whether the impact on heritage by the proposed dam is considered acceptable. This course can be undertaken by Rous Water, however the strong views of the Aboriginal community and the findings of this and any future heritage reports would also be taken into account;

- Rous Water should continue to consult with the registered Aboriginal stakeholders with regards to all on going facets of not only the proposed Dunoon Dam, but also in the ongoing Future Water Strategy. It is recommended that this consultation should take place at least every six months, to ensure that any future review of consultation regarding the proposed dam will consider consultation to have been ongoing and unbroken, therefore not requiring a restart of the process. Additionally, Rous Water needs to be aware that additional cultural information may be made available in future and that this information should be considered as fully as the information in this report was; and
- Non-Aboriginal heritage within the proposed dam site which would see high impact has been determined to be of little or no significance, and presents no impediment to any future plans for the site. However, in order for Rous Water to continue to fulfil Best Practice, the management recommendations for individual sites should be followed during any potential development.

Should Rous Water decide to proceed with development of the dam, the following processes are seen as the most likely, but other may come into play as time progresses:

Action	Statutory Path
Proceed to development with investigation/movement of burials	Part 5.1 EP&A Act as SSI
Investigation of Burials prior to development proceeding and not undertaken as a Part 5.1 development	Part 6 NP&W Act (AHIP Application)
Proceed to development after preliminary investigation	Part 5.1 EP&A Act as SSI
No further investigations or dam development based on acceptance of burials significance and reliance on other water development pathways	None

Table 2: Legislative Outline

Based on the findings of this study, it is the opinion of Ainsworth Heritage that there remains a considerable risk that the Director General of Planning NSW may not approve the proposed development on heritage grounds based on the clearly expressed views of the local Aboriginal people with regards to the cultural heritage of the site, especially the burials. This is further reinforced through the usual divisions of some of the stakeholders who participated in the community consultation, who despite their past differences, held similar views with regards to the protection of sites, in particular, the burials.

Ainsworth Heritage would recommend that the burials not be disturbed until such time as all other Future Water Strategy options have been considered. Should it be found that the other options for water supply in the region are unfeasible or will not meet demand, then investigation of the dam could recommence, with the burials becoming one of the primary

constraining features and all work undertaken with the full inclusion of all Aboriginal stakeholders.

1.0 INTRODUCTION

Ainsworth Heritage was commissioned to undertake the Proposed Dunoon Dam Initial Heritage Impact Assessment (the assessment) by Rous Water, in order to assist Rous Water in determining the viability of the site for a dam as part of Rous Water's *Future Water Strategy*. This chapter outlines the structure, aims, site location and methodology of the assessment.

1.1 Study Area and Project Background

Rous Water is a County Council on the North Coast of NSW that provides bulk water supply services to approximately 100,000 people within the Lismore, Byron, Ballina and Richmond Valley local government areas.

During the 1990s, Rous Water commenced work on the *Rous Regional Water Supply Strategy* which developed a long term planning strategy to secure water supply sources to serve the Rous Water supply area to the year 2050 and beyond. At the conclusion of the Planning Study Rous Water resolved to:

- Develop and implement a comprehensive water-use Demand Management program to reduce per capita water consumption;
- Adopt a policy to monitor and implement emerging water reuse and alternative supply strategies;
- Develop the "Lismore Source" as the next new supply source for the Rous Regional Water Supply; and
- Nominate the Dunoon Dam site as Rous Water's future water source in anticipation of demand exceeding the combined capacity of the Lismore Source plus existing sources.

The Dunoon Dam proposal involves the construction of a new on stream water storage on Rocky Creek, downstream of the existing Rocky Creek Dam. The dam would be approximately 2.5 kilometres west of the village of Dunoon, from which it takes its name.

As part of its *Future Water Strategy*, Rous Water has now commenced work to determine the technical viability and likely cost of the proposed Dunoon Dam. In 2008, Rous Water engaged NSW Public Works to lead the development of the Concept Design for the proposed Dunoon Dam. The studies undertaken to date indicate the proposed Dunoon Dam is technically feasible.

Initial planning suggests that the Dunoon Dam would comprise of:

- An across stream storage (dam) on Rocky Creek, downstream of the existing Rocky Creek Dam, approximately 2.5 kilometres west of the village of Dunoon;
- A dam lake of approximately 50,000 megalitres (ML) with a surface area of 220 hectares;
- An environmental buffer zone surrounding the dam of approximately 225 hectares;
- Infrastructure including dam wall, spillway and pumping station;
- A rising main connecting the dam to existing raw water mains at Dorrroughby, from which water shall be transferred to Rous Water's existing Nightcap Water Treatment Plant; and

- Various plant and facilities associated with the operation of the dam.

These details remain subject to confirmation during the concept development phase being undertaken by NSW Water Solutions.

The Assessment is being undertaken to assist in the development of the Concept Design of the proposed Dunoon Dam. It has been undertaken to a standard that will allow Rous Water to assess the cultural impacts associated with the Dunoon Dam proposal and to weigh these impacts against the benefits provided by the proposal, as well as in future, more detailed, environmental reporting and future detailed studies of the site. These standards include:

- General guidelines:
 - ICOMOS Australia. *The Burra Charter*; and
 - Kerr, J. S. *The Conservation Plan*.
- NSW Heritage Branch guidelines (based on the NSW Heritage Act 1977):
 - *Assessing Heritage Significance*;
 - *Historical Archaeology Code of Practice*; and
 - *Statements of Heritage Impact*.
- Office of the Environment and Heritage (EPA) Documents (based on the National Parks and Wildlife Act 1974):
 - *Aboriginal Cultural Heritage Consultation requirements for proponents*;
 - *Aboriginal Cultural Heritage Standards & Policies Kit*;
 - *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*; and
 - *Code of Practice for Archaeological Investigation in NSW*.

The Figures on the following pages illustrate:

- The location of Dunoon in relation to NSW;
- The location of Dunoon within the NSW North Coast;
- The location of the Study Area in relation to the Dunoon area; and
- The Study Area in relation to Dunoon.

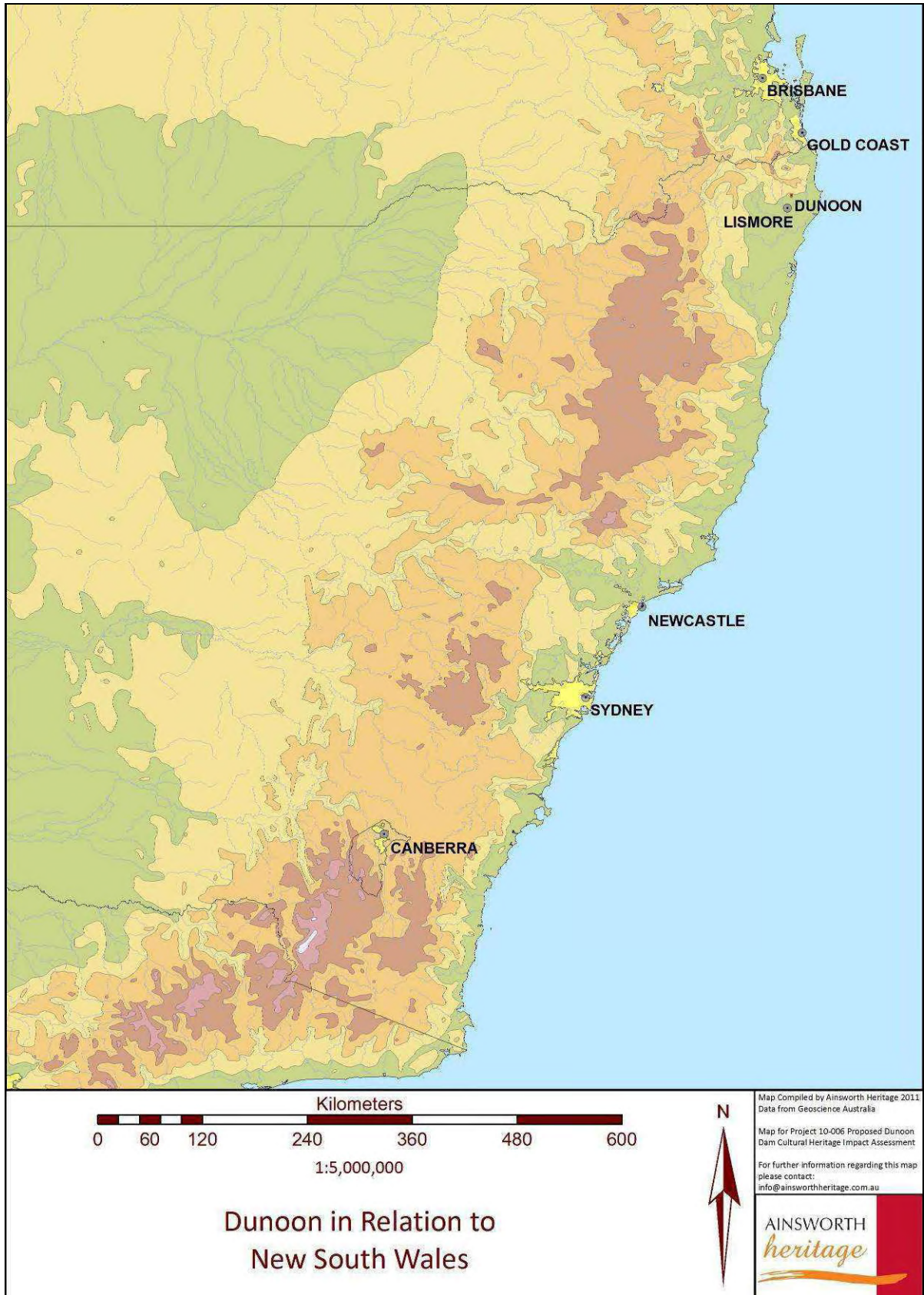


Figure 1: Dunoon in relation to NSW.



Figure 2: Dunoon in Relation to the North Coast.

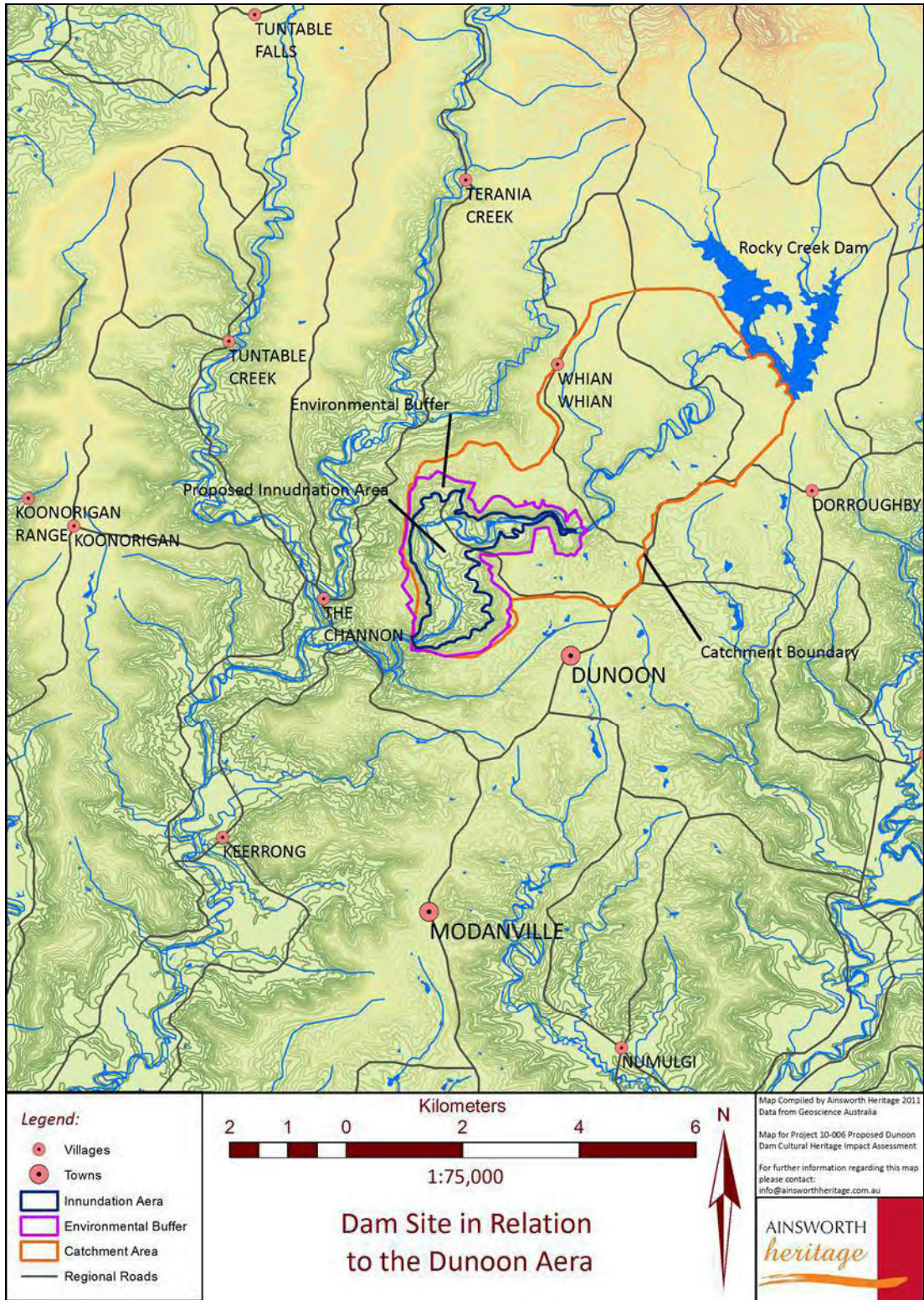


Figure 3: Study Area in Relation to the Dunoon area.

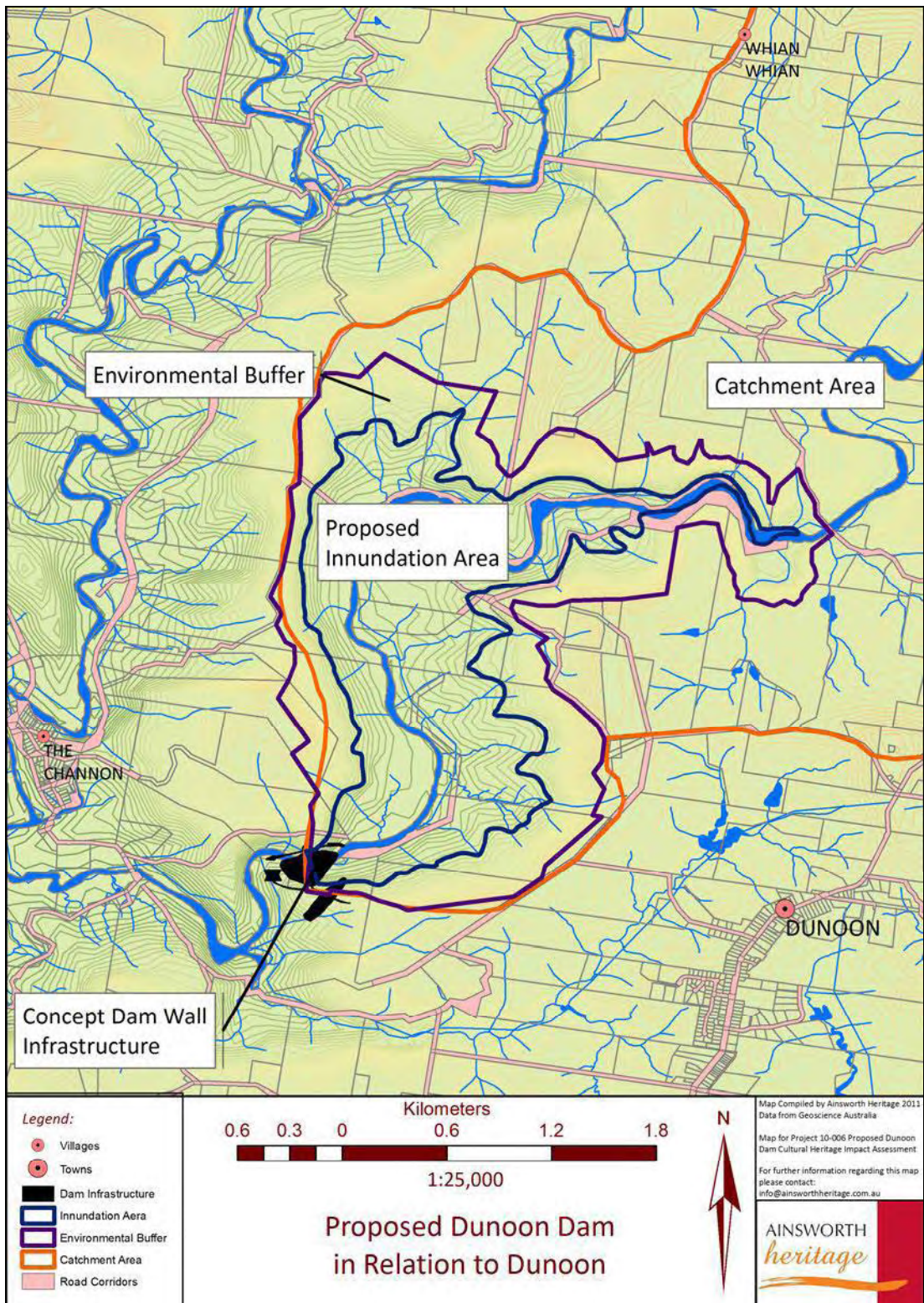


Figure 4: Study Area in relation to Dunoon.

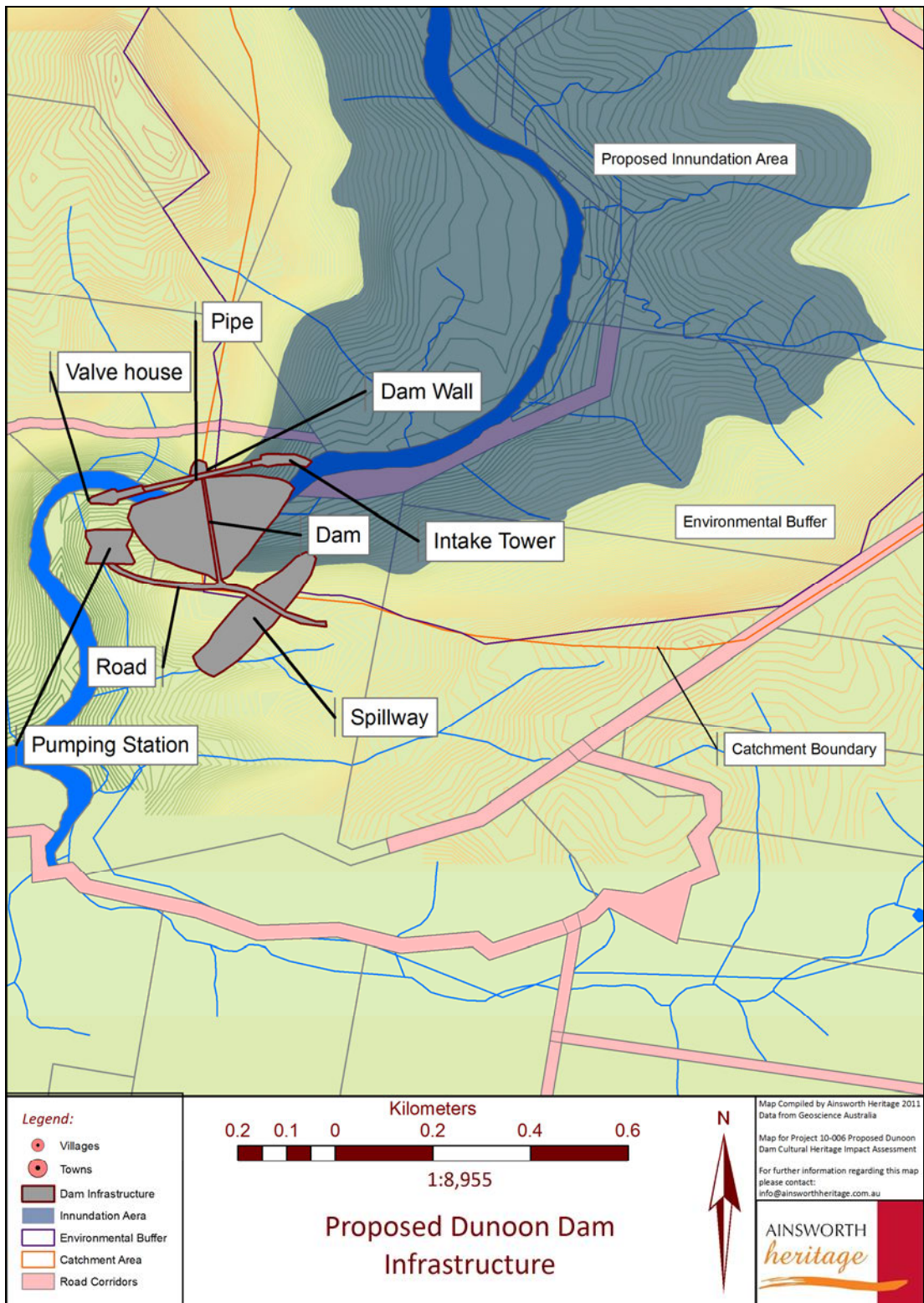


Figure 5: Proposed Dunoon Dam Concept Infrastructure

1.2 Aims & Methodology

1.2.1 Project Aims

The aims of this Assessment are:

- To provide an understanding of the likely impacts on cultural heritage of the proposed dam;
- To ensure the assessment is of a standard that will allow future focused investigation at the environmental impact assessment stage;
- Assist in the development of the concept design;
- Assist Rous Water in assessing whether the proposed Dunoon Dam is a viable option for inclusion in Rous Water's Future Water Strategy;
- To assist Rous Water in meeting its statutory obligations under relevant cultural heritage legislation, including the *National Parks and Wildlife Act* (which has been recently amended by Parliament), *NSW Heritage Act* and the *Environmental Planning and Assessment Act*;
- To identify and assess the initial and potential significance of known, and any potential, cultural heritage items which may be located within the project area or be impacted by the proposed dam, especially within areas that will undergo high levels of disturbance in the future **S 14T(5)(b),(e)**
- To assist Rous Water in developing an effective and beneficial relationship with the local Aboriginal Groups, which will enable any future work to be carried out based on mutual trust and shared goals;
- To ensure that any input from the Aboriginal Community is recorded and that any issues or requirements of any groups are discussed and balanced to ensure appropriate results for all groups are obtained;
- To develop initial management recommendations which will assist in minimising impact on any heritage significance that may be associated with the land in question, in such a way that they can be implemented and clearly understood by managers, planners, designers and on-site workers;
- To outline procedures and statutory requirements which will assist in minimising impact on any significant archaeological resources that may be associated with the land in question, in such a way that they can be implemented and clearly understood by managers, planners, designers and on-site workers;
- To ensure that sound initial management guidelines are developed for any works that may impact upon the significance of any cultural heritage or archaeology, which may be present on the land in question, especially prior to works;
- To provide the client with a straightforward and functional assessment report that will provide an initial picture of their opportunities and obligations regarding both Aboriginal and non-Aboriginal heritage impacted by the project and that can be used to inform future environmental impact studies;
- To prepare a report that will enable Rous Water to be aware of the cultural heritage items, objects and sites present, and to provide them with clear and concise initial options and initial management recommendations for development.

1.2.2 Methodology

The specific aims of the project will be met through undertaking the following steps:

- Primary research in local archives, as well as utilising Ainsworth Heritage's own extensive local Aboriginal and non-Aboriginal historical records and sources (Chapter 3);
- Review previous heritage and archaeological reports of the area (Chapter 4);
- Consultation with registered local Aboriginal Stakeholders (Chapter 2);
- Development of a probability model for the site (Chapter 4);
- Undertake a field survey and significance assessment of any identified heritage items in the area in conjunction with local aboriginal Stakeholders (Chapters 4 and 5);
- Prepare an impact assessment which balances the significance of the heritage items with the impact of the proposed works (Chapter 6);
- Examine direct, indirect and cumulative impacts of the proposed dam (Chapter 6);
- Develop sound management recommendations, procedures and policies to mitigate impact and manage the value of heritage items in the future (Chapters 7 and 8); and
- Produce a report for use as part of the larger planning process and as a stand alone document.

1.3 Legislative Requirements and Best Practice

This report conforms to the requirements of the *NSW National Parks and Wildlife Act, 1974* (NP&W Act) and the *NSW Heritage Act, 1977* (Heritage Act), seeking to address the requirements of both Acts in regards to the significance of the Aboriginal and non-Aboriginal Cultural Heritage of the site. Additionally, the assessment will address the requirements of the *Lismore City Council Local Environment Plan*, the *Environmental Protection and Biodiversity Conservation Act, 1999* and the *Environmental Planning & Assessment Act, 1979*.

The assessment uses the following best practice documents as guides for its structure and methodology:

- *The Burra Charter*, Australia ICOMOS, 1999;
- *Aboriginal Cultural Heritage Standards & Policies Kit*, NSW National Parks and Wildlife Service, 1997;
- *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*, DECCW, 2010;
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, DECCW, 2010;
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*, DECCW, 2010;
- *The Conservation Plan*, James Semple Kerr, Australia ICOMOS, 2013;
- *Conservation Management Documents*, Heritage Office and Department of Urban Affairs & Planning, 1996, revised 2002; and
- *Assessing Heritage Significance*, Heritage Office 2001.

1.4 Aboriginal Values and Consultation

Aboriginal Community Consultation was undertaken in accordance with *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, and at times beyond the standard these require. The following steps were undertaken:

- Advertisements in local papers and consultation with OEH and other government agencies provided the project with a detailed list of relevant Aboriginal Groups;
- Letters and phone calls to these groups enabled Rous Water to determine which groups in particular wished to be involved;
- These Aboriginal Groups were then consulted with during each step of the project, as well as partaking in the fieldwork aspect of the project;
- The significance of any sites encountered was given a preliminary assessment of significance prior to the draft report, with the final assessment undertaken through consultation with the Aboriginal Groups; and
- Additionally, the management policies provided as part of the draft report were amended according to input from the registered stakeholder groups during the compilation of the final report.

1.5 Authorship and Field Researchers

The Community Consultation was undertaken by Matt Alexander and Jane Ainsworth of Ainsworth Heritage on the following dates:

- January 31, 2010 – Initial consultation meetings;
- August 29 to September 9, 2011 – Draft report meetings; and
- 17 October, 2011 - Site Meeting with additional stakeholders.

The field survey was undertaken on April 14-18, 2011 by a team comprised of the following:

- Matt Alexander (Ainsworth Heritage);
- Jane Ainsworth (Ainsworth Heritage);
- David Salt (Ainsworth Heritage);
- Kevin Grunsell (Ainsworth Heritage);
- [REDACTED] (Widjabul Elder and Ngulingah LALC Sites Officer); and
- [REDACTED] (Ngulingah Sites Officer).

This report was written by:

- Matt Alexander, Cultural Heritage Management Specialist;
- Jane Ainsworth, Archaeologist and Built Heritage Specialist;
- Fred Yarad, Historian;
- Rosemary Brooham, Historian;

- David Salt, Archaeologist;
- David Williams, Archaeologist and GIS Technician; and
- Kevin Grunsell, Project Assistant.

1.6 Acknowledgements

The following individuals were of assistance in the compilation of this assessment:

- Rob Cawley and Wayne Franklin – Rous Water;
- Margaret Balandin and Michael Neville – NSW Public Works;
- The Rous Water Project Reference Group;
- S 14T(3)(a), S 14T(3)(b) and S 14T(3)(a), S 14T(3)(b) – SMEC Australia Pty Ltd;
- Richmond River Historical Society; and
- S 14T(3)(a), S 14T(3)(b).

1.7 Scope and Limitations

This assessment is an initial overview of the heritage of the proposed Dam site and is not an exhaustive study of the sites history or area. However, the assessment aimed to provide a solid foundation for future details and focused research in the event that the proposed dam becomes a reality. Additionally, this assessment did not undertake any ground disturbing archaeological works.

2.0 CONSULTATION

This chapter outlines the process by which the local Aboriginal stakeholder groups were involved in the assessment process. Documentation regarding this process is contained in Appendix A.

The consultation process was undertaken using OEH guidelines, with timeframes equal to or in excess of the required minimums and consisted of the following general steps, with the planned timeframes in brackets, with these timeframes at time longer, but never shorter than planned:

- Contact with the relevant authorities (approximately 2 weeks);
- Initial advertisement (seven week response time);
- Contact with interested stakeholders (seven week response time);
- Initial consultation meeting (at the end of the seven week response time);
- Field survey participation (four weeks after the consultation meetings); and
- Review of the Draft Report (thirteen week response time after completion of draft report).

2.1 Requests for Consultation

The process of consultation for this assessment was undertaken in a comprehensive manner, which aimed at the inclusion of as many relevant Aboriginal Stakeholder Groups as possible in the assessment. For details of specific correspondence, please refer to Appendix A.

Rous Water placed advertisements in the Northern Star (18 December, 2010 and 9 January, 2011), Northern Echo (16 December, 2010 and 13 January, 2011) and Koori Mail (12 December, 2010 and 12 January, 2011) newspapers, with an initial request for consultation and general information on the project. Advertisements were made on both sides of the Christmas/New Years break to ensure adequate time and opportunity was provided for Stakeholders to respond. A response time of seven weeks from the initial advertisement was provided. A copy of the advertisements is provided in Appendix A.

Additionally, Rous Water wrote to the following government bodies to gather data on known local Aboriginal Groups:

- The OEH EPRG regional office in Coffs Harbour;
- The Ngulingah Local Aboriginal Land Council;
- The Registrar, Aboriginal Land Rights Act 1983 for a list of Aboriginal owners;
- The National Native Title Tribunal for a list of registered native title claimants, native title holders and registered Indigenous Land Use Agreements;
- The Native Title Services Corporation Limited (NTSCORP Limited);
- Lismore City Council; and
- The Northern Rivers Catchment Management Authorities for contact details of any established Aboriginal reference group.

Only two of the bodies listed above (OEH and The National Native Title Tribunal) returned information regarding known Aboriginal Groups in the area. The information gathered from

the government bodies was then used to mail letters to each of the known Aboriginal Groups in order to provide them with the opportunity to register as stakeholders for the project. Letters were sent to each known Group on December 15, 2010 and January 15, 2011. A copy of the letters and the register of stakeholders are included in Appendix A.

Responses from the requests for consultation were received from:

- [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)], who represents the Wiyabal Native Title Claim and is the Ngulingah Sites Officer;
- Ngulingah Local Aboriginal Land Council; and
- [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)], who identifies as a descendant of the local Aboriginal peoples.

Additionally, the following groups expressed an interest in being kept informed, but did not feel the need to join the consultation meetings:

- Canowinda Tweed Byron Aged and Disabled Aboriginal Corporation;
- Midjungbal Culture Museum; and
- Bundjalung Tribal Society

2.2 Community Pre-Report Management Requests

Each of the stakeholder groups had several requirements for the management of impacts during the project. In some cases these aims were similar and will allow for an effective integration of all stakeholder requirements into the final report.

Two meetings were scheduled for the 31st of January: one in the morning with [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] (Widjabul and Ngulingah) and [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] (Deputy Chair of the Ngulingah LALC), and the other in the afternoon with [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)]. Attending each meeting was Rob Cawley (Rous Water), Matt Alexander (Ainsworth Heritage) and Jane Ainsworth (Ainsworth Heritage).

Unfortunately, on the day neither [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] nor [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] were able to attend the meetings, consequently a second meeting scheduled for January 21, 2011. Unfortunately, on the day [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] was unable to attend this second meeting, however, he was kept informed of all ongoing work, as were the other stakeholders. No representatives from the Land Council attended either.

The meeting with [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] initially provided a general overview of the project and work done to date, outlining general Future Water Strategy information and the timeline of the proposed dam so far and what was the ongoing plan. Ainsworth Heritage outlined the general course of the project, the fieldwork's methodology and the predictive model, all very similar to previous projects undertaken with [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] in the Lismore area. Additionally, Ainsworth Heritage outlined how confidential appendixes can be used, with a MOU if required, to ensure culturally sensitive information is not shared beyond those who need to know, with mapping of sites being done in a general way and not too accurate as to allow easy location (however, any sites are fully recorded and reported to EPA).

Information provided at the meeting included a detailed methodology, the draft history, mapping, field survey plan and report format. This material was discussed and [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] asked for any feedback over the next few weeks in order to improve the Plan and the historical framework.

Ainsworth Heritage also discussed AHIMS data, the predictive model and planned survey areas and fieldwork timings to provide a more accurate picture of what would be involved in the field survey. Additionally, the late day 2/early day 3 survey areas (section 4.4.2), where the dam wall would be investigated, was of particular concern to the Widjabul People and they wished to have this area well surveyed. Rous Water identified that an area greater than the possible footprint area around the dam wall would be surveyed, to enable readjustment of infrastructure where possible, in order to prevent potential impact on sites.

Information provided by [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] with regards to the project consisted of the following points:

- He could provide an accurate tribal map of the Bundjalung country (which is now incorporated as part of the report);
- He would provide feedback regarding history and methodology over following weeks;
- He provided information regarding several unlisted sites nearby, but not within the dam area and general, not specific locations. Due to this these sites are not mapped in the report:
 - [S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)];
 - [S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)];
 - S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)
[redacted]
[redacted]
 - S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)
[redacted]
[redacted];
 - [redacted] S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)
[redacted]
- He provided information regarding the Aboriginal Stations in the area:
 - One, [S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)], was located at [S 14T(1)(g), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)]
[redacted] the other was [S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)].
 - S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)
[redacted];
- He asked that the inundation area be thoroughly surveyed;
- He expressed concern about future use of the Catchment once the alteration of water use comes into play; and
- He was generally very happy with the way the project had been handled to date and he considered the format and fieldwork plan to be good.

The remaining stakeholder groups were mailed a copy of all the information provided to [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] and provided with the same 4 week time frame for responding to the information. The information included a detailed project methodology, draft site history, predictive model, field survey plan and maps of the site. None of the other groups and individuals provided any response to the information.

Although all groups were offered an opportunity to attend fieldwork, [S 14T(1)(d), S 14T(3)(a), S 14T(3)] (Widjabul/Ngulingah) and Ngulingah Local Aboriginal Land Council eventually provided the site officers for the field survey.

2.3 Community Draft Report Comments

Following the completion of the draft report, it was mailed (18 July, 2011) to the registered stakeholders, along with a letter advising each stakeholder of a meeting to discuss the draft, to be hold on 18 August, 2011. Follow up phone calls were made in the week before the meeting to assure attendance, but only two stakeholders arrived for the meeting. A decision was made to postpone the meeting until 1 September, 2011.

The meeting of 1 September, 2011 was attended by:

- Ainsworth Heritage – Matt Alexander; Jane Ainsworth;
- Rous Water – Rob Cawley; Wayne Franklin;
- [S 14T(1)(d), S 14T(3)(b), S 14T(3)];
- [S 14T(1)(d), S 14T(3)(a), S 14T(3)] (Githabul Group);
- [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] (Ngulingah LALC);
- [S 14T(1)(d), S 14T(3)(a), S 14T(3)] (Widjabul Native Claimants); and
- [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] .

The views of each group regarding the draft report is provided below.

2.3.1 Ngulingah LALC

The view of the Ngulingah LALC was that it would generally be guided by the views of the registered stakeholders and that family representations be considered as well. However, the LALC wanted to see preservation of sites within the proposed dam area given a high priority. The LALC also stated that too much Aboriginal heritage in the area had been lost over time and that it was necessary that known and any future cultural heritage sites be protected for future generations.

[S14T(5)(b),(e)]

The LALC was of the opinion that the groups that had only recently registered interest be given an opportunity to view the dam site to gain a better appreciation of the proposed works and the impact that they could have.

The LALC also noted that the Aboriginal people need to be comfortable with any decision to let some sites be disturbed. If this was not possible, the LALC may not be able to accept any dam.

The LALC asked if dam could move further north to Rocky Creek Dam or if latter could be enlarged and if so if any cultural sites would be affected by expanding Rocky Creek dam. Currently that information was not available, as it was not part of the scope of the current

project, but would be investigated should Rocky Creek be further examined in future as part of the Future Water Strategy.

2.3.2 Widjabul Native Title Claimants

Having been involved in much of the project so far, [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] main point was that if dam can be lowered then he would not object to the dam, as long as the burials are avoided, as he saw these as the most important aspect of the site. [S 14T(1)(d)] also asked if a surveyor could determine the water capacity of a lower dam. Advice was that this could be undertaken in future should a study of the option be required.

[S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] also noted that Rous Water has purchased much land in the 1990s but studies were only now being undertaken. Rob Cawley acknowledged that a cultural survey should have been done before this point.

2.3.2 [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)], [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)], [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] and [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)]

[S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] firstly reminded the group that there are many traditional owners that needed to be consulted in the process, something that was agreed by all present.

[S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] was also worried that regardless of any decision made, that sites would be destroyed regardless of the reports findings. However, Rob Cawley made it clear that the wishes of the Aboriginal people would be given the highest regard and not swept aside.

[S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] offered additional information for the history and wished to join any additional site visit. His offer of additional information was accepted and a later meeting was undertaken to gather this information from him.

[S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] were of similar opinions to [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] and supported his requests and positions. Additionally, each wished to join any additional site visit, should one be undertaken.

2.3.3 Additional Site Visit and Historical Information

A site visit with [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)], [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)], [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] and [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] was undertaken on 25 October 2011 in company with Matt Alexander and Rob Cawley. The site visit allowed the recently registered stakeholders to gain a better appreciation of the site and the extents of the proposed dam. Those present repeated their position from the 1 September meeting and asked if in future the burials could be visited. Due to the nature of the burials location and the weather, it was agreed that winter would be the best time to access the site.

2.4 Site Significance for the Aboriginal Community

Based on the information provided during community consultation and from the historical investigations, the following outline of the site's significance was determined.

The area of Dunoon and the associated [S14T(5)(b),(e)] [S 14T(5)(b),(e)] are significant to the local Aboriginal community as integral elements within the larger network of sites located in the local and regional areas.

The individual sites, especially the burial sites, are important in helping to understand the local Aboriginal people's use of the immediate Dunoon area and how these local sites fit into

the pattern of those already known to the north and on the Wilsons River to the south. Additionally, due to the proximity of the pathway from Tucki Tucki to Wollumbin, these sites and their relationship to the pathway and other nearby ceremonial sites play an important role in demonstrating the interconnected nature of the Bundjalung Cultural Landscape.

As such, the importance of the burial sites is central to any ongoing consultation for the site and none of the Aboriginal Groups involved in consultation were in any doubt about ensuring the protection of the burials from future impact.

2.5 Conclusions

All the registered Aboriginal Groups were provided with all the available information and asked for their views and any additional information they might require. The responses received were positive and the methodology for the assessment and history of the project were seen as detailed and sufficient for the purpose of an initial overview of the dam area's heritage.

From the discussions and historical background, S14T(5)(b),(e) was determined to have potential to contain Aboriginal sites and to be of significance to the local Aboriginal Community through its own significance and its significance as part of the larger Bundjalung Cultural Landscape.

Later consultation outlined that impact upon the burials located was not acceptable to the Aboriginal peoples and that impacts on any other sites were not preferred wherever possible. As such, future consultation will revolve around the issue of the burials, with the other sites likely seen as important, though likely not the focus of discussions.

3.0 CONTEXTUAL OVERVIEW

The following chapter provides an overview of the proposed Dam’s place in the history of the broader area, information regarding the Bundjalang people and their lifestyle and the development of the site.

The NSW Heritage Branch has previously determined what are the historic themes of NSW. Historic themes are a part of an area’s history that is a self contained story relating to an aspect of the areas history, such as its settlement, or a specific industry. These themes are important for guiding research, management and interpretation of sites. Table 3 identifies the themes for the Proposed Dunoon Dam.

Theme	Notes ¹
Aboriginal cultures and interactions with other cultures	Activities associated with maintaining, developing, experiencing and remembering Aboriginal cultural identities and practises, past and present; with demonstrating distinctive ways of life; and with interactions demonstrating race relations.
Migration	Activities and processes associated with the resettling of people from one place to another (international, interstate, intrastate) and the impacts of such movements
Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture
Environment - cultural landscape	Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings
Forestry	Activities associated with identifying and managing land covered in trees for commercial timber purposes.
Pastoralism	Activities associated with the breeding, raising, processing and distribution of livestock for human use
Birth and Death	Activities associated with the initial stages of human life and the bearing of children, and with the final stages of human life and disposal of the dead.

Table 3: Historical Themes

3.1 The Landscape²

The pre-European landscape of the Northern Rivers region was very different to that seen today and was dominated by the large sub-tropical forest known as the Big Scrub. The Big Scrub was an area of rich soil that facilitated dense vegetation and was rich in cedar which flourished from the “...left bank of the Richmond River to the McPherson Range in the north”³.

This vast forest grew in the rich red kraznozerm soils of the Alstonville Plateau, extending from the north-west outskirts of Lismore to Byron Bay. The landscape in the immediate area of Dunoon was a mixture of ecotones, making the area an excellent site for resource gathering, as different areas could be accessed for varying resources throughout the year.

The area close to Dunoon consisted of upland forests and scrub, with lower lying creeks having some excellent camping sites located along their banks. These creeks and lower camping areas accessed by numerous ridge spurs that also provided access to water, the mountain areas to the north and the Wilson’s River to the south, where additional and

¹ NSW Heritage Office. 2001. *New South Wales Historical Themes. Table showing correlation of national, state and local themes, with annotations and examples.* NSW Heritage Branch, Sydney.

² All of the geology, landform, geomorphic and soils information comes from Rous Water datasets provided to Ainsworth Heritage.

³ Richmond River Historical Society, Notes from 1959.

varied resources could be harvested. This varied vegetation pattern was a major factor in providing many resources for the local Aboriginal people.

3.1.1 Geology

Dunoon is located within an area known as the Lamington Volcanic Suite, a collection of igneous rock consisting of Lismore Basalts, Nimbin Rhyolites and Blue Knob Basalts, which were deposited by volcanic flows from Wollumbin (Mt Warning) between 23 and 8 million years ago. These volcanic rocks overlay a series of older sedimentary rocks, laid down during the Jurassic period.⁴

The proposed Dam area primarily lies over a section of what are known as the Walloon Coal Measures and Kangaroo Creek Sandstones. The layers contain shales, sandstones coal and ironstones and are from the period of Jurassic; a geological age that stretched from approximately 200-145 million years ago.

⁴ Gorman, A. C. 1998. *An Archaeological survey of the NRTV Broadcast Site, Parrots Nest, Near Lismore, NSW*. University of New England. p.3

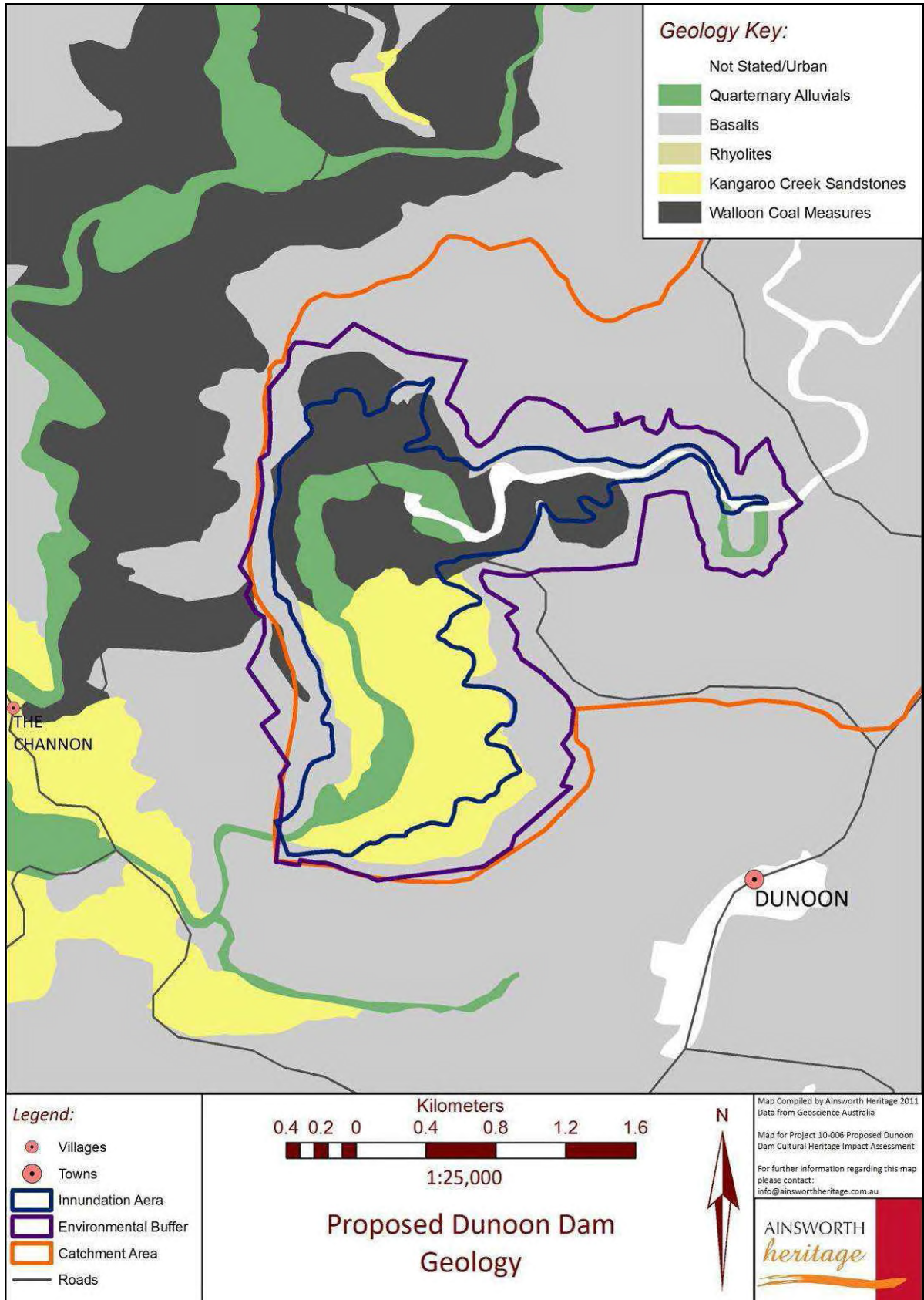


Figure 6: Geology of the Dunoon Area

3.1.2 Landforms

The local landforms of the proposed dam area are dominated by the effects of the local ridgeline complex, Rocky Creek and the Lismore Basalt/Sedimentary rock layers. The proposed dam area's perimeter is delineated by the surrounding ridges, which are cut by Rocky Creek in the north-east and south-west. These two semi-circular ridgelines form a natural bowl, with the slopes running off these ridges towards Rocky Creek are initially quite steep. Figures 7 and 8 illustrate the landforms and slopes.

The eastern side of Rocky Creek consists of small streams running west into Rocky Creek and a series of small ridges running west from the main north-south ridge that forms the site's eastern edge. Within this area are also several small raised areas, which are above the creek level and have access to the main ridge: the area east of Fraser's Road, between the road and Rocky Creek, being the most notable of these areas.

The western side of the site is far steeper, with fewer and shorter streams feeding into Rocky Creek and fewer small ridge lines providing easy access to the creek itself. Although the ridge to the west of the creek is not generally as high as those to the north and east, it has steep sides, which preclude easy access. The southern termination of this ridge is split from the eastern ridge by Rocky Creek and is the proposed site for the dam wall. The existence of several caves in this area was mentioned by local landowners, around the base of the southern end of the western ridge, near the proposed dam wall. This western ridge was also the geographical barrier between the site and The Channon, ensuring that the historical development of the valley was driven from Dunoon, which was further away but more easily accessed.

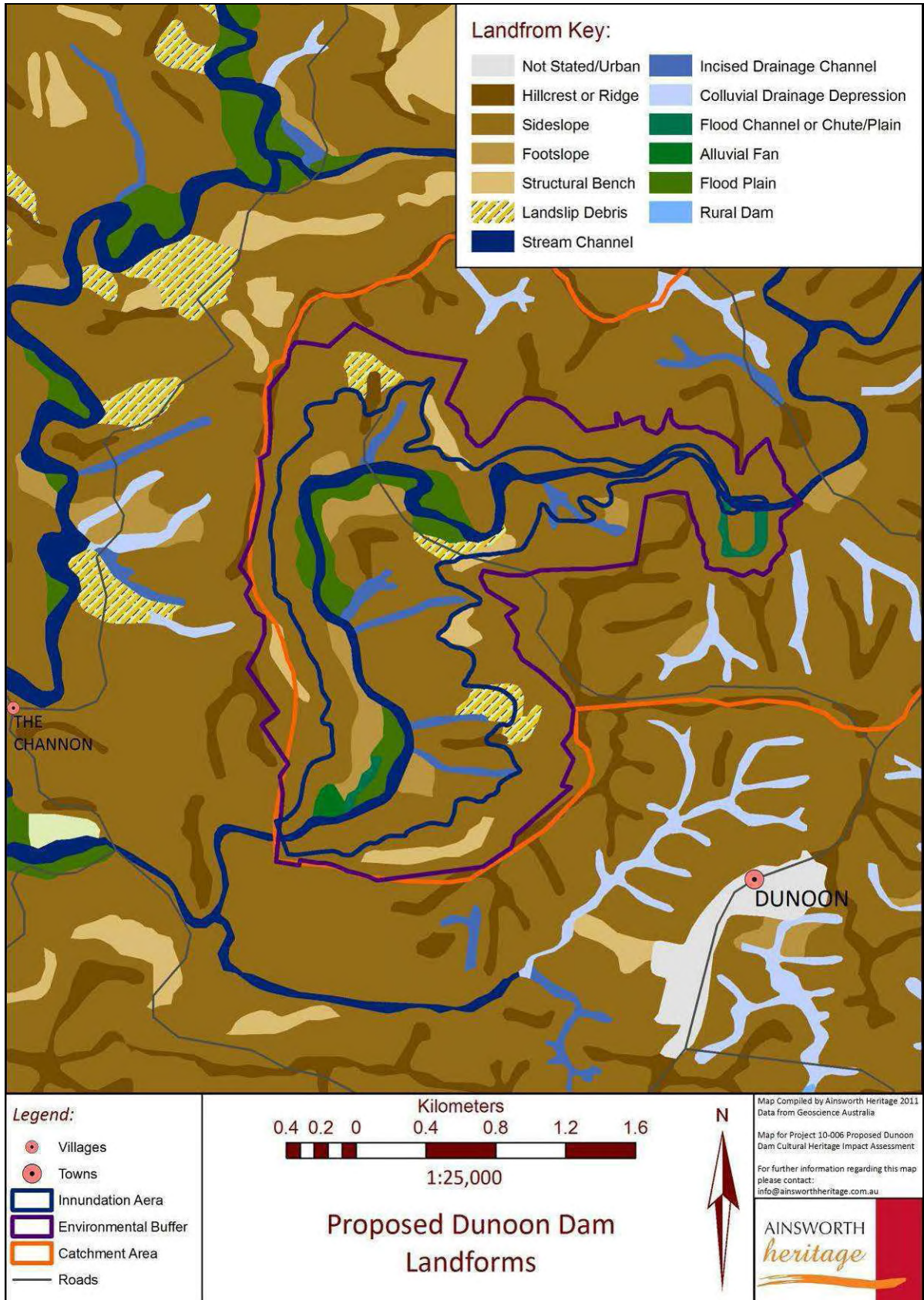


Figure 7: Dunoon Area Landforms

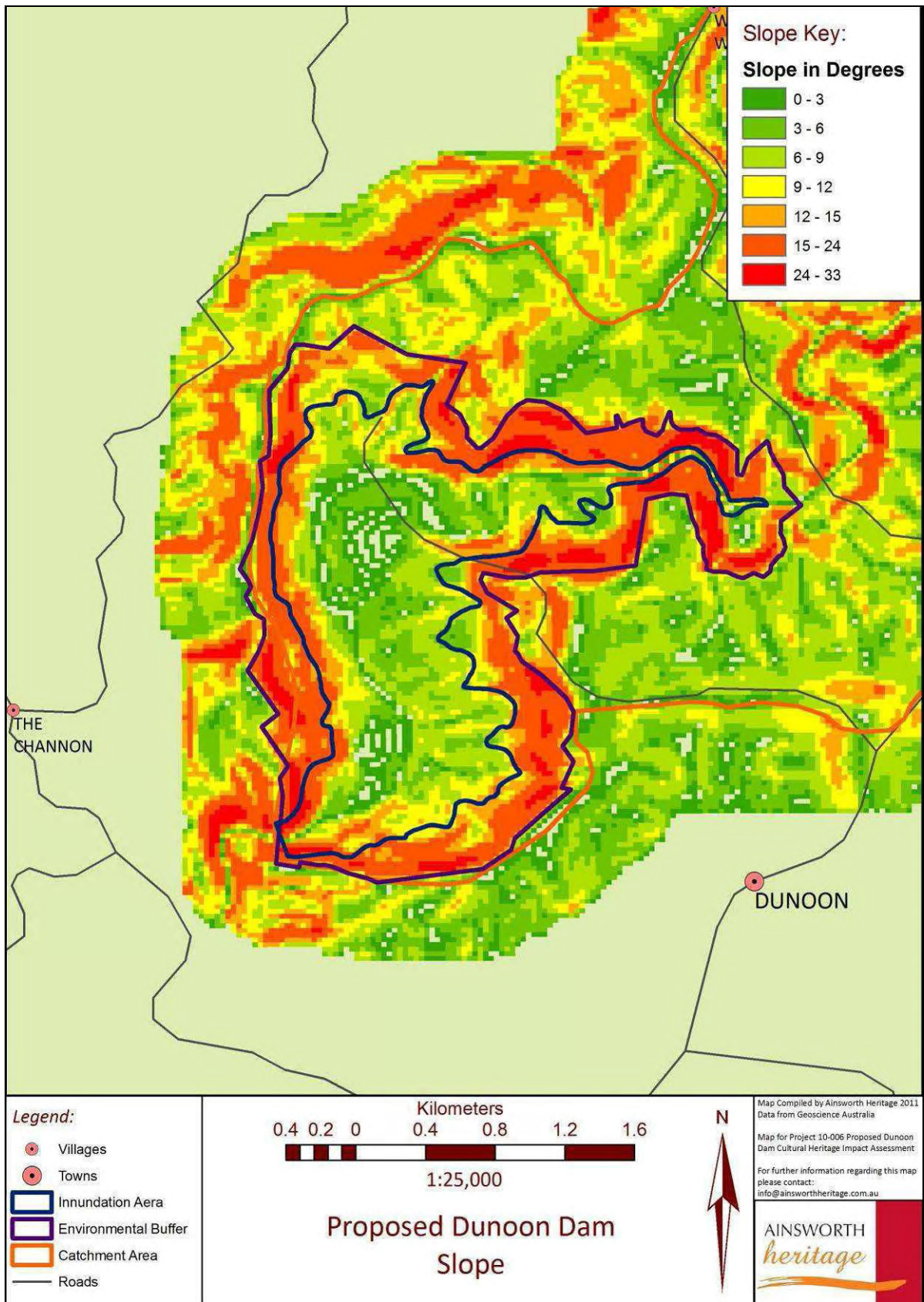


Figure 8: Dunoon Area Slope

3.1.3 Geomorphic Activity

The primary geomorphic activity has been water driven erosion within the proposed dam area, from rain on the hillsides and stream driven erosion within the gullies and creeks, as the sedimentary layers are eroded away more quickly than the surrounding igneous rocks. Some materials, however, have been deposited along the banks of Rocky Creek towards the south west, near to the proposed dam wall. Severe erosion has occurred within the proposed dam area within the south east corner, where the steep slopes were cleared and used for banana plantations. This has resulted in long term and ongoing erosion processes, mainly by water and to some land slips in the area. Additional heavy erosion has occurred in the north and north east of the site, with the lower areas of the site, not within the stream channels, suffering limited erosion. Figure 9 illustrates the erosion patterns across the dam area.

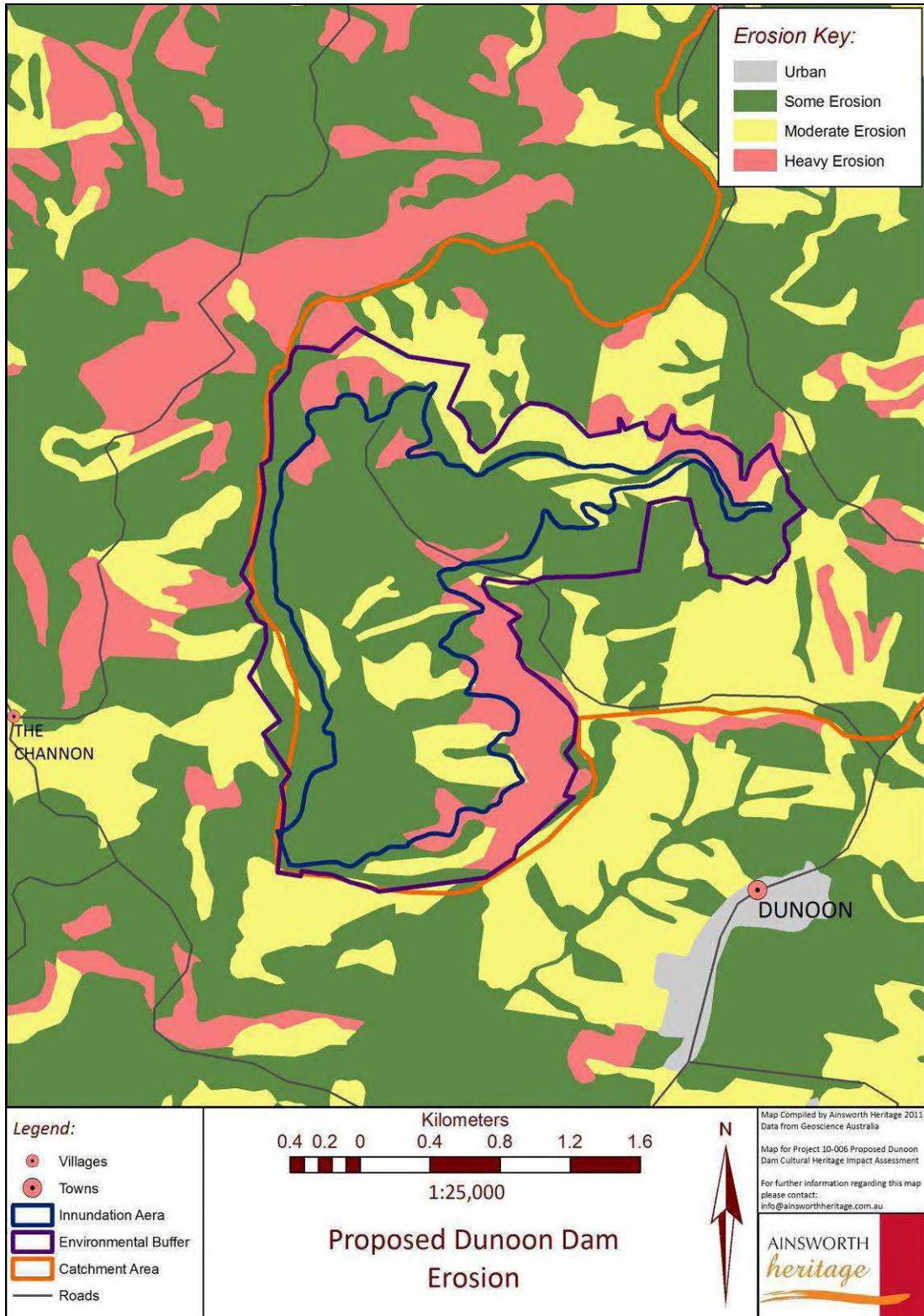


Figure 9: Dunoon Area Erosion

3.1.4 Soils

The soils of the proposed dam area are primarily derived from the local basalts and the later erosion of these soils. The primary soil type of the majority of the proposed dam area are the red and yellow podzolic soils, which are noted for its poor properties for crop production. The stream channels are bedded by alluvial deposits of this same soil and of drainable black clayey alluvial soils, which follow the course of Rocky Creek and form most of its banks. The upper slopes consist of the rich kraznozerm soils, derived from the local basalts and other igneous rocks and are richer and far more suited to agriculture than the lower lying podzolic soils. These Kraznozerm soils are the basis for much of the cropland of the region. The creek bed and banks stretching from the north east corner of the site towards Fraser's Road consist of heavily eroded and thin lithosoils, where the creek banks consist mainly of large eroded boulders with little erodible material present. Figure 10 shows the soil patterns which occur across the dam area.

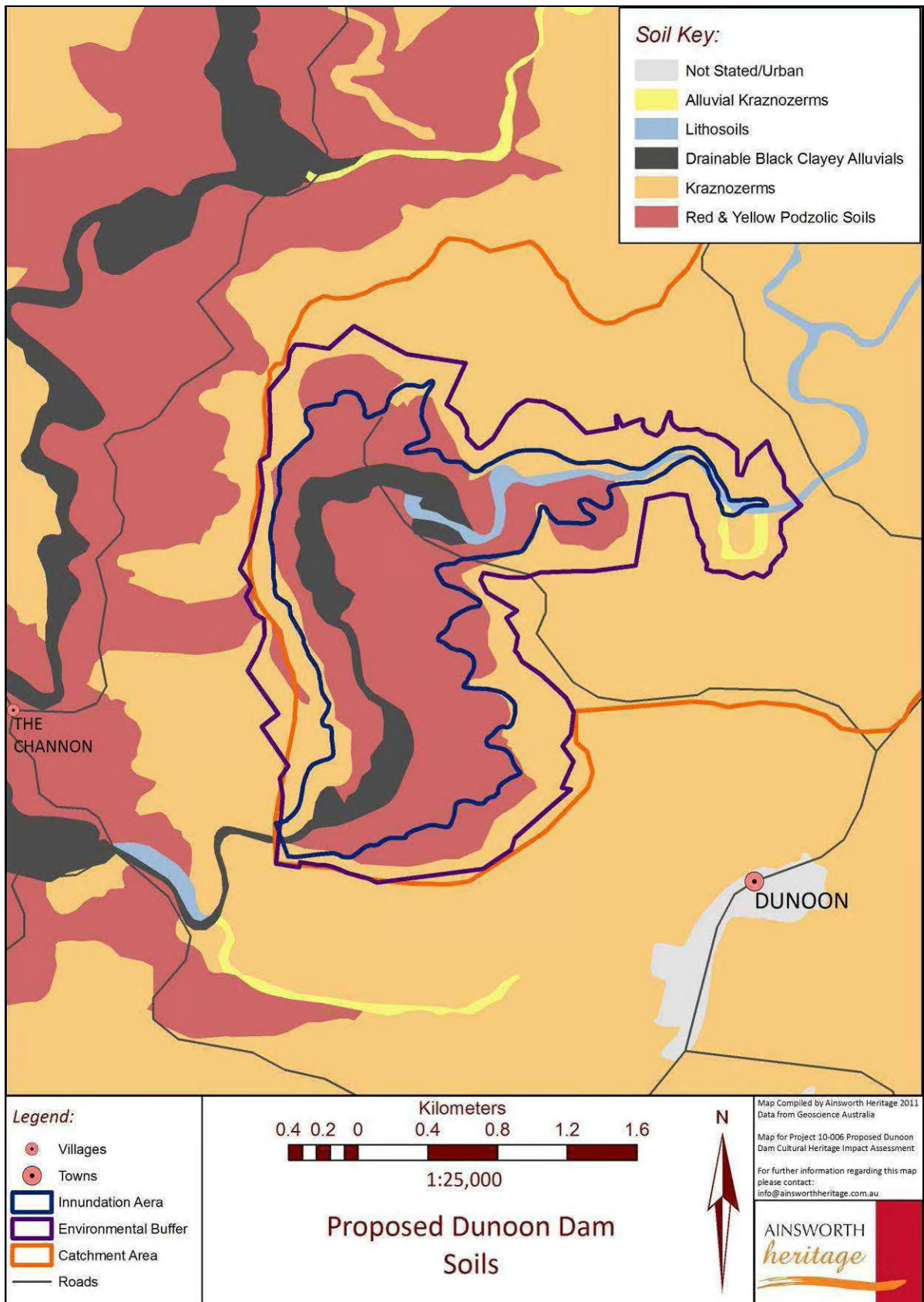


Figure 10: Dunoon Area Soils

3.1.5 Physical Description of the Proposed Dunoon Dam Site

The Dunoon Dam Area consists of two main zones; the environmental buffer and the inundation area.

The Environmental Buffer (see Figure 4) sits on a raised area of steep slopes and deep gullies running off the basalt uplands. The vegetation is mainly regrowth forest, although there is the occasional patch of farm pasture and plantation, mainly along the ridges at the uppermost boundary of this zone. Much of this land was first cleared by timber cutters, partially grazed and later used for banana plantations. Since that time, regrowth, mainly by camphor laurels, lantana and other noxious weeds, has made the Environmental Buffer extremely difficult to access and, when combined with the steep slopes, an area of low probability for Aboriginal Archaeological potential. Additionally, the Environmental Buffer has seen several large land slides over time, but due to its nature will be subject to far less disturbance during any development of the proposed dam.

The Inundation Zone, lying on the lower Walloon Coal Measure in the north and Kangaroo Creek Sandstones in the south, varies in terrain from the sloping edges of the environmental buffer to relatively flat areas close to the edge of Rocky Creek, although in parts Rocky Creek runs through narrow gullies as well. Flatter areas in the central and southern parts of the dam zone, particularly on the western side of the creek, are used for cultivation and grazing with the slope on the west being relatively gentle in places. Regrowth vegetation (mainly camphor) generally increases with the incline of the terrain on both sides of Rocky Creek. On the central eastern and increasingly on the western side of the river there is some plantation planting of Pecans, Poplars and Blue Gums. Tributaries to the main water course are often in steep forested gullies even if they lie in areas of pasture.

The Riparian environment bisects the entire site and in the longest contiguous environmental zone in the dam area. Rocky Creek's edge along this farmland is generally forested, including some old growth trees, but primarily camphor and privet regrowth. At the North and South extremes of the Dam Zone there are areas of native forest on the upper slopes and sub-Tropical Rainforest within areas close to the creek. Cliffs and large boulders line the river as the terrain steepens in these environments.

The recent Flora and Fauna report for the proposed dam site by SMEC, noted the following regarding the vegetation communities present within the site.

"...found that seven broad vegetation types occur. This includes three communities dominated by exotic and weed species. These are: Pasture; Plantations; and Camphor Laurel Disturbed Woodland/Forest; and Four native and regenerating vegetation communities: Tallowwood Open Forest; Flooded Gum-Tallowwood-Brush Box Moist Open Forest; Sub-tropical Rainforest; and Warm Temperate Rainforest.

Figure 23 following illustrates the areas vegetation types.

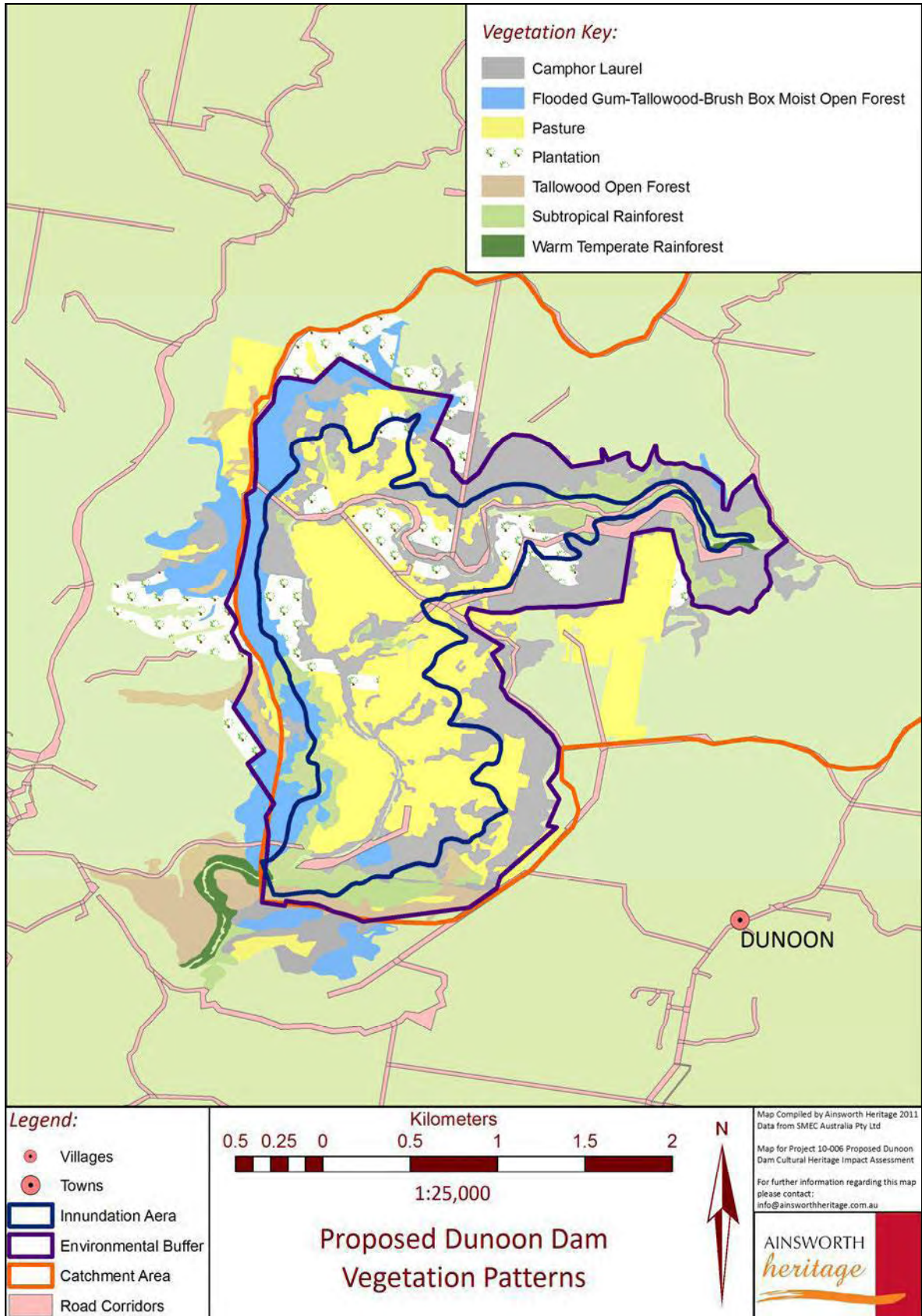


Figure 11: Site vegetation patterns (data courtesy of SMEC Australia Pty Ltd).

3.2 Aboriginal History

This Aboriginal history is based on archival research, review of previous cultural studies of the region and oral testimony from local Aboriginal Stakeholders.

3.2.1 The Local Aboriginal People – The Bundjalung and Wiyabal

The local Aboriginal people of the Lismore region belong to the Bundjalung Nation, a large language group of inter-related tribes that stretches from the Logan River in the North to the Clarence River in the South. Norman Tindale, in his 1974 map, identified several tribal groups in the area but did not identify the larger Bundjalung nation at that time within the map itself⁵.



Figure 12: Extract from Tindale's 1974 map, showing his analysis of tribal boundaries on the NSW North Coast and South East Queensland (South Australian Museum).

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g)

⁶

The map compiled by the Richmond River Historical Society (Figure 12 below), shows the tribal lands of the Bundjalung from north of the Clarence River to the Queensland border, expanding on Tindale's map and providing greater detail. This map omits the Arakwal land, shown on the Tindale map near Byron Bay, and moves the borders between tribes, as well as using alternative names for some of the tribes, a common occurrence over time⁷. However, this map does not encompass the full extents of the wider Bundjalung lands.

The map in Figure 13 was compiled during research into a potential native title claim for all the Bundjalung. Although this claim was never made, smaller areas being claimed within the Bundjalung nations, the research into the extents of the Bundjalung country is evident in the map, as are the numerous smaller lands claimed by the various Bundjalung peoples.

⁵ http://www.samuseum.sa.gov.au/page/default.asp?site=2&page=TIN_Tribal. Accessed 02/08/2010

⁶ Pers Comm ^{S 14T(1)(d), S 14T(1)(g)}

⁷ Oakes, M. J. 1988. *The Aborigines of the Richmond Area*. Richmond River Historical Society.

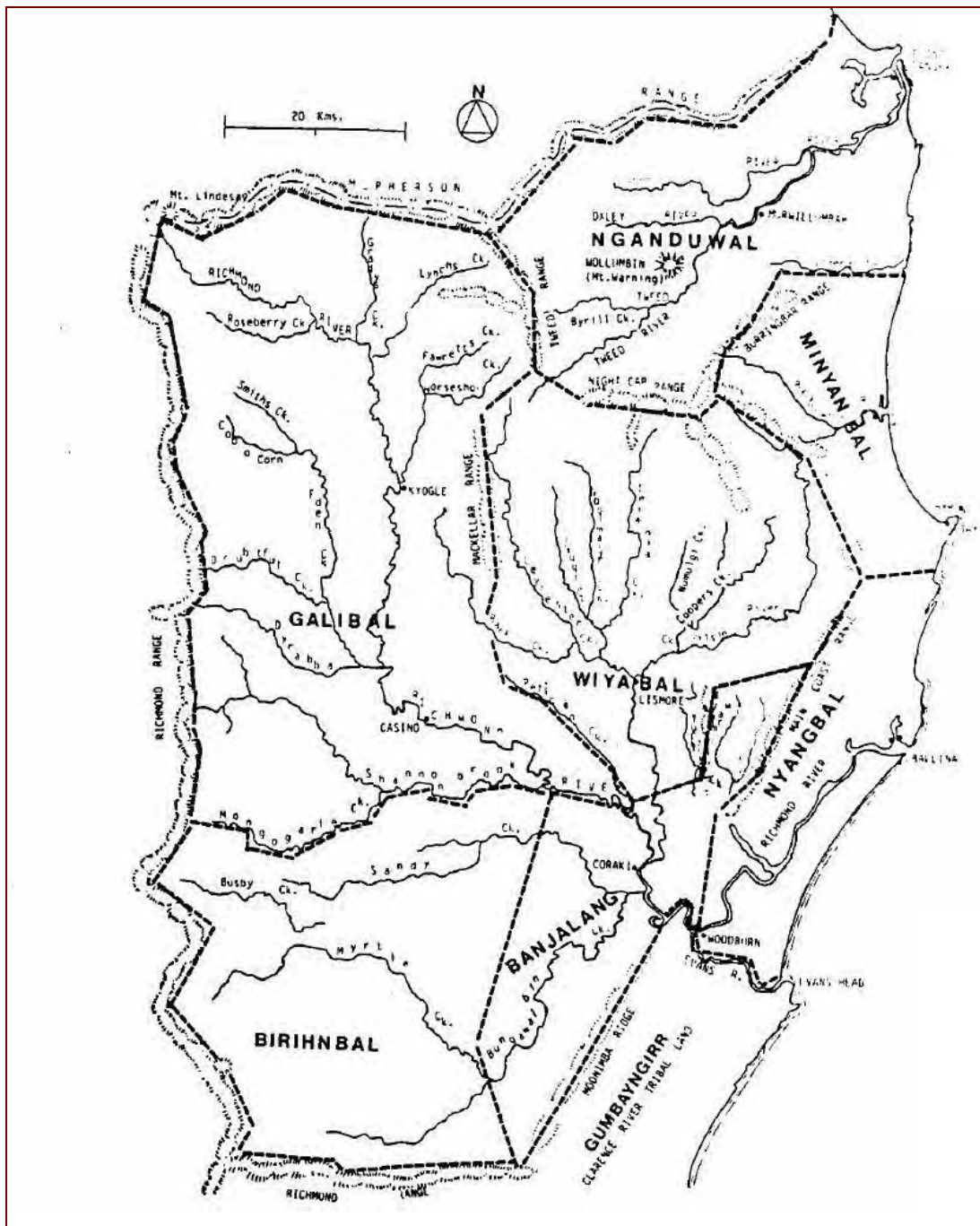


Figure 13: Map of the Tribes of the Lismore Area (Oaks. M. J.).



Figure 14: Lands of the Bundjalung Nation (original map courtesy of [S 14T\(1\)\(d\), S 14T\(3\)\(a\), S 14T\(4\)\(a\)](#)).

The major settlement of the Northern Rivers region has been dated to approximately 6,000ya (years ago), although dates as old as 22,000ya have been hypothesised for the region⁸. Many more recent dates been attributed to the increase in population, which many coastal areas appear to have undergone following the end of the last major glaciation, around 4-6,000ya, and the increased number of sites created by the larger populations. The local Lismore area's linguistic group, the Wiyabal, was one of approximately twenty separate tribes within the larger Bundjalung Nation. According to the Richmond River Historical Society, the Wiyabal tribal land extended from north of Coraki, through the Wilson's River catchment to the MacKellar and Nightcap Ranges (see Figure 12 and 13).

The region that is ascribed as being part of the Bundjalung Nation has been identified in the archaeological record through the absence of certain tools commonly found within other groups⁹. The lack of large amounts of equipment was commented on by early settlers as such items were common elsewhere (such as in coastal groups like the Biripi of the Taree region). These items included multi-pronged spears, bone hooks, woomeras and spears with barbed points.¹⁰ Part of the reason for the lack of specialised apparel may be due to the immense quantity and easily gathered riches of the region, where more specialised tools were required for the gathering of resources in more limited environments.¹¹

The region was recognised from the earliest times of white settlement to have supported a large Aboriginal population, especially along the coastal fringe. Early settlers, such as James (Jed) Ainsworth, recorded numbers of up to 500 individuals close to Ballina¹². Although the numbers for the inland tribes are assumed to be lower than those of the coast, an overall population of the Bundjalung could well be in the vicinity of 2-3,000+¹³. Although few sites or artefacts have been identified during surface surveys in areas near to Dunoon, the area is known to have supported an Aboriginal population of some numbers before the arrival of Europeans. Reasons provided in the recent Heritage Concepts Survey for Rous Water were given as *"...the lack of surface visibility and the relatively small number of archaeological research surveys carried out in the region."*¹⁴

The Tribes of the Bundjalung are known to have maintained contact with each other and to have come together for ceremonial purposes throughout the years. Some ceremonies were dictated by the cycle of local or regional resources, such as the tri-annual gathering in Queensland for the Bunya Festival, or gathering on the coast for the seasonal harvest of sea foods¹⁵. S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)

[REDACTED]

[REDACTED].¹⁶ S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)

[REDACTED]

[REDACTED].¹⁷ S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)

[REDACTED]

[REDACTED]. Further evidence for inter-Tribal communication comes from the

⁸ Collins. J. P. 1993. *Lismore Flood Levee System: An Archaeological Assessment*. WBM Oceanics Australia. p.12.
⁹ Collins. J. P. 1993. *Lismore Flood Levee System: An Archaeological Assessment*. WBM Oceanics Australia. p.14.
¹⁰ Alexander, M and Hobbs, D. 2010. *Old Bar Precinct 3: Aboriginal Heritage Assessment*. Ainsworth Heritage. Part 4.
¹¹ Piper, A. 2000. *An Archaeological Assessment of the Skyline Road/Durheim Road, Monaltrie, Lismore, NSW*. p. 12.
¹² Ainsworth. J. 1922. *Reminisces 1847-1922*. Beacon Printery. 1922. p.28.
¹³ Collins. *Ibid*. p.12.
¹⁴ Sciusco, L and Harrison, R. 2006. *Aboriginal and Historic Archaeological & Cultural Heritage Assessment & Statement of Heritage Impact*. Heritage Concepts, Sydney. p.4
¹⁵ Piper. *Ibid*.
¹⁶ Pers Comm S 14T(1)(d), S 14T(3)(a).
¹⁷ Pers Comm S 14T(1)(d), S 14T(3).

archaeological record, where stone materials from the Tweed and Clarence River areas, used for the manufacture of axe heads, have been found within the Richmond Valley area¹⁸.

Within the larger Tribal divisions of the greater Bundjalung nation, smaller sub-tribes (sometimes called Clans or Hordes) were responsible for the maintenance of various distinct geographic areas within the larger tribal area. Although the names of these various sub-Tribes are rarely known, some evidence exists that one was based in or close to Lismore itself and known as the Wyrallah¹⁹. It appears that apart from the major ceremonial times and large resource festivals, local groups led a semi-sedentary lifestyle, which was possible due to the wealth of local resources. Early accounts talk of the local Aboriginal peoples camping on the lower slopes and moving to high ground during the wet season, indicating a seasonal camping and movement cycle²⁰.

The Lismore area is at the confluence of, or close to, several major ecological areas, as well as being well watered: factors which would have led to a vast array of natural resources being present for use. The additional benefit of the excellent local volcanic and metamorphic stone only added to the wealth of the region.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)

²¹. Additional food resources, such as native fruits, nuts and vegetables, would also have been easily accessible and in great supply. Native fauna, such as various reptiles, birds and smaller animals would have been readily available in such an environment.

3.2.2 The Stories of the Land

S 14T(1)(d), S 14T(1)(g), S 14T(3)(a), S 14T(3)(b), S 14T(5)(b)

S 14T(1)(d), S 14T(1)(g), S 14T(5)(b)

²² S 14T(1)(d), S 14T(1)(g), S 14T(5)(b)

S 14T(1)(d), S 14T(1)(g), S 14T(5)(b)

¹⁸ Binns, R. A and McBryde. I. 1972. *A Petrological Analysis of Ground-edge Artefacts from Northern NSW*. A.I.A.S. Canberra. p.81.

¹⁹ Bray, E. 1923. Richmond River Historical Society File – *Bundjalung*.

²⁰ Collins. *Ibid.* p.13.

²¹ Pers Comm S 14T(1)(d), S 14T(3)(a).

²² Pers Comm S 14T(1)(d), S 14T(3)(a).

3.2.3 Material Culture

The material culture of the Aboriginal people of the Tweed, Richmond and Clarence Rivers is marked by an absence of certain tools commonly found within other groups, particularly so in the case of fishing technology. The multi-pronged fishing spear and the shellfish hook are both absent from this region, fish having been caught in nets or speared in the shallows.²³ The spears used in this area were single pointed fire hardened weapons, of both a lighter and heavier variety. Additionally, the woomera and other technology used to launch spears in other parts of Australia were not used in this area.²⁴ The range of materials used locally is considered wider than central Australian tribes, with fewer all purpose items, few composite tools and a greater number which were developed to suit specific tasks. It is suggested that this was an outcome of a more sedentary lifestyle facilitated by the region's rich resource base.²⁵

The archaeological evidence suggests changes to a simpler stone technology took place only centuries before European settlement and the stone tools in use immediately prior to European settlement show little typological sophistication and did not demand highly skilled craftsmanship to manufacture.²⁶ These stone tools, along with shell tools, were used in the manufacture of all wooden weapons and implements. As shell was an easily procurable commodity on the coast, it has been suggested that it was often used in preference to stone.²⁷ Early European reports mention the use of edge ground axes, which were generally hafted to wooden handles with string and grass tree gum or bees wax. These were used to cut toe holds when climbing or to cut possums and bee hives from trees.²⁸ They were also used to cut out and shape weapons and implements such as shields, spears and boomerangs, and to cut bark and other materials for dwellings and canoes. On the Northern Rivers, ground-edged knives were also manufactured and apparently used for everyday tasks such as skinning animals and cutting meat.²⁹

The resources of sub-tropical rainforests were used extensively by local Aboriginal people. Bark was used for containers and vegetation was used to manufacture items such as bags, rope, pouches and netting.³⁰ The process of manufacturing string from bark was described by Dawson: "*The bark was soaked in water, chewed, then twisted and rolled on the thigh, the result being excellent string almost as tough as whipcord*".³¹ Dilly bags were woven from rushes and grasses and containers for liquids were fashioned from the leaves of the Bangalow Palm.³² Nets for both the capture of game and fishing were manufactured from fibres. Fishing nets consisted of finely meshed netting made around two meters long, with a stick at each end and bent into the shape of a bow.³³ These were used individually, or in combination, with many of the same when larger areas needed to be netted.³⁴ Jed Ainsworth describes fibre nets used for capturing game as follows: "...constructed in long

²³ Piper, A. 2000. *An Archaeological Assessment of the Skyline Road/Durheim Road, Monaltrie, Lismore, NSW*. p. 14.

²⁴ *Ibid.*

²⁵ Collins. J. P. 1992. *Byron Shire Aboriginal Heritage Study*. Prepared for Byron Council. p. 22.

²⁶ Piper. A. *Ibid.*

²⁷ Collins. J. P. *Ibid.* p.24.

²⁸ *Ibid.*

²⁹ *Ibid.*

³⁰ Gorman. A. C. 1998. *An Archaeological Survey at the NRTV Broadcast Site, Parrott's Nest, Near Lismore, NSW*. University of New England. p.6.

³¹ Dawson. R. L. 1935. *Aboriginal Words and Place Names of the Lower Clarence River District*. Quoted in Collins. J. P. 1992. *Byron Shire Aboriginal Heritage Study*. Prepared for Byron Council. p. 24.

³² *Ibid.*

³³ *Ibid.*

³⁴ Piper. A. *Ibid.* p.13.

*sections, four foot in width, which, when joined together for the purpose of the chase, would extend sometimes to a mile and a half in length...".*³⁵

Rainforest timbers were used to manufacture spears, a variety of clubs, shields, boomerangs and digging sticks.³⁶ Boomerang manufacture has been described by Dawson: *"The boomerang tree had symmetrically curved, thin slabby roots or hips above ground from which boomerangs could easily be cut with the right curve or shape needing only to be trimmed down to the correct thickness and weight. After being scraped down, the boomerang was dried and hardened over a fire."*³⁷ On the Richmond – Tweed, non-returning boomerangs were used for hunting small marsupials, flying foxes and birds, as well as for combat.³⁸ Another important tool made from timber, usually mangrove wood, was the pademelon stick or throwing stick, used chiefly for hunting small animals and sometimes in tribal conflict.³⁹

The women's digging stick was another important tool that could be applied to many tasks. The digging stick was constructed from a similar hardwood to that of spears, with digging sticks reportedly being between 1.8 and 2 metres long, pointed at both ends, and specially hardened by being placed on the fire.⁴⁰ These were used to dig out yams and other vegetables, to kill small animals and as a women's weapon in conflict. A similar tool, used by males, was the nulla-nulla. Nulla-nullas, or clubs, employed both hardwood and stone in their manufacture. Stone chips or bits of bone were embedded or attached to the head of the club using an adhesive agent, making it a more formidable weapon.⁴¹

Conflict played a significant part in traditional Aboriginal life with a number of weapons manufactured specifically for use in battle. Spears, boomerangs, nulla-nullas and digging sticks performed dual roles, being used for food gathering and warfare, whilst shields and battle axes were primarily constructed for combat. Dawson describes battleaxes: *"...a battle axe of flat hardwood curved at one end and pointed, and a battle axe of round wood curved at one end and pointed and used like a pick."*⁴² Shields were manufactured from the wood of a tree called the Yahroohgul Tree, which grew mostly in the forest country of the Richmond and is described as, *"...deciduous, its wood soft and heavy; it cuts like cheese when green but dries hard and tough."*⁴³ The shield was trimmed to an oval shape and shaped convex on the front side with the reverse left flat. On the back side the hand grip was cut out when the wood was green and soft. The complete shield was then smoke dried and the convex side was rubbed with bees wax and polished so that flying missiles would be deflected off it.⁴⁴

3.2.4 Interaction Between Aboriginal People and European Settlers

The first European people that the local Aborigines experienced contact with are likely to have been convicts from the penal settlement at Moreton Bay (established in 1826), who had absconded while working on the Tweed River cutting timber. More substantial contact began in the 1850s, as cedar getters moved into the area to exploit the large stands of cedar

³⁵ Ainsworth. J. 1922. *Reminiscences 1847-1922*. Beacon Printery, Ballina. p. 17.

³⁶ *Ibid.*

³⁷ Dawson. R. L. 1935. *Aboriginal Words and Place Names of the Lower Clarence River District*. Quoted in Collins. J. P. 1992. *Byron Shire Aboriginal Heritage Study*. Prepared for Byron Council. p. 23.

³⁸ *Ibid.*

³⁹ Collins. J. P. *ibid.* p.23.

⁴⁰ *Ibid.* p. 23.

⁴¹ *Ibid.* p. 24.

⁴² Dawson. R. L. 1935. *Aboriginal Words and Place Names of the Lower Clarence River District*. Quoted in Collins. J. P. 1992. *Byron Shire Aboriginal Heritage Study*. Prepared for Byron Council. p. 23.

⁴³ *Ibid.*

⁴⁴ *Ibid.*

along the waterways of the Big Scrub. The relationships that formed as a result of this contact were largely cordial, as the cedar getters used the local knowledge of the Bundjalung to locate stands of valuable timber.⁴⁵

As the pace of white settlement increased through the 1880s, the impact of European settlement on the Bundjalung peoples' traditional lifestyle increased, as it became increasingly difficult to maintain hunting and ceremonial practices. Aboriginal people began to camp on the outskirts of white settlements, as had happened in other parts of NSW settled earlier. The *Aboriginal Protection Board* (APB) had been formed with the task of creating and implementing policies designed to mitigate against conflict occurring between Aboriginal people and the newcomers.

In 1887, the APB gazetted the Dunoon Aboriginal Reserve (now Modanville) in the hope that the local Aborigines would abandon their traditional lands, leaving them available to white selectors, whilst residing within the boundaries of the reserve. The reserve was situated on poor quality land and thus did little to attract local Aborigines, who were more interested in obtaining independent farming lands or continuing to camp on their traditional lands in the area.⁴⁶ However, eventually the reserve did accommodate more of the local Aborigines. In 1910, a traditional *corroborree* was held at the reserve, which attracted great attention in the local papers and was one of the first large *corroborrees* to be held in many years.⁴⁷

As part of the process of contact, the inevitable massacres of the local Aboriginal peoples occurred, as it had in every region into which the European settlers had moved. Although relations were often cordial at first, once settlers began to take up land and begin keeping stock, conflicts would begin. These conflicts could arise from the hunting of stock by the Aboriginal peoples, anger at their sites being interfered with or just simple competition for ever decreasing natural resources as the native landscape was cleared. The massacre of over 100 Aborigines at Ballina in 1846 was only one such example within the Bundjalung lands, with another massacre on the Orara further south another recorded example of the growing friction between the two peoples. Massacres were not just perpetrated with guns, as often whole families and clans were eliminated using arsenic infused damper, or individuals and small families would be eliminated, with no or little record kept of their deaths.⁴⁸

By the early 20th Century, encroachment on traditional Aboriginal lands by white settlers meant that opportunities for Aborigines maintaining some level of independence became increasingly limited. This led to the growth in importance of the Dunoon Aboriginal Reserve as an Aboriginal settlement.⁴⁹ During research for this report, no reference was found that indicated the location of the early reserve, however it is likely to be the same location that later references call 'the Pinnacle'.⁵⁰ S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(3)(a), S 14T(3)(b), S 14T(5)(b)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].⁵¹ Hundreds of people used the site until the Aboriginal Protection Board built a manager's residence and all

⁴⁵ Alexander, M and Hobbs, D. 2010. *Old Bar Precinct 3: Aboriginal Heritage Assessment*. Ainsworth Heritage. p.30.
⁴⁶ Heritage Concepts for Parsons Brinkerhoff Australia Pty Ltd. 2006. *Aboriginal and Historic Archaeological and Cultural Heritage Assessment and Statement of Heritage Impact-Rous Water Lismore Source*. Lismore. p.24.
⁴⁷ Northern Star, 13 June 1910 and 30 June 1910. Accessed via www.trove.nla.gov.au
⁴⁸ Elder, B. 2002. *Blood on the Wattle: Massacres and Maltreatment of Aboriginal Australians Since 1788*. New Holland Publishers (Australia) Pty Ltd, Sydney. p.235.
⁴⁹ Ibid. p.25.
⁵⁰ RRHS File. *Wiyabal Bundjalung*
⁵¹ Pers Comm S 14T(1)(d), S 14T(3).

the Aboriginals left. An article titled 'Education in Lismore' found in the RRHS "Aboriginal" file records that in 1908, the APB set aside about 480 acres about ten miles from Lismore on the Dunoon Road as an Aboriginal Reserve, which people referred to as the 'Pinnacle'.⁵² In 1909, partly in response to demands from white settlers for segregated schooling, the APB started a 'special' school for Aboriginals on the Reserve.⁵³ There was no direct supervision at the school until 1914 when the APB appointed a manager and the Reserve was converted to a 'station'. A series of conflicts ensued between the new manager and the Aboriginal residents, with these conflicts escalating in response to the alarm of residents at threats to remove children, to the point where many moved off the reserve to unreserved lands closer to Lismore.⁵⁴ These disputes led to the resignation of the manager, the closing of the school in late 1916 and the reversion of the status of the 'station' to that of an unsupervised reserve.⁵⁵

By 1917, as it became clear that the manager would not return to the reserve, Aboriginal people from as far away as Cabbage Tree Island and Runnymede Station moved to the Dunoon Reserve in order to escape the surveillance and interference of the APB in their lives.⁵⁶ In an attempt to counter this movement, the APB tried to revoke the reserve in 1922 after they stated they received many complaints about the reserve's condition.⁵⁷ However, these efforts were met with sustained protest as the Aboriginals believed they should be able to make their own decisions about where they could live and that they were promised that the reserve (when it opened) would be their home in perpetuity.⁵⁸ As a compromise, the APB revoked only part of the reserve and left a ten acre strip of land around the existing village, while issuing Lismore police with instructions to discourage new arrivals.⁵⁹ These efforts were in vain, as the population of the Dunoon Reserve continued to grow, resulting in the re-opening of the 'special' school in 1926. At the same time the APB increased its levels of surveillance at Dunoon, prompting some residents to move to an unsupervised campsite at Tuncester (later Cubawee) near Lismore and send their children to the public school in town.⁶⁰ By 1928, the segregation of this school was reasserted and in 1932, the APB decided to shift the school at Dunoon to a new reserve which they had created around the Tuncester campsite. APB officials encouraged people to move to the new Reserve resulting in the closure of Dunoon Reserve.

The Cubawee Reserve then became the main reserve for Aboriginals in the area and grew to a large size. On 31 August 1940, the reserve held an Aboriginal Convention, believed to be the first of its kind in Australia.⁶¹ However, like the Dunoon Reserve, by the late 1930s there were reports from the Aboriginals of attempts to force them from the reserve and further inland.⁶² S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(3)(a), S 14T(3)(b), S 14T(5)(b)

.⁶³ Such forced moving of Aboriginals was common at the time

⁵² Photocopy of an article titled *Education in Lismore*. Undated. RRHS File BE-3

⁵³ *Ibid.*

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*

⁵⁶ *Ibid.*

⁵⁷ *Brisbane Courier News*, 24 June 1922. Accessed via www.trove.nla.gov.au

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*

⁶⁰ *Ibid.*

⁶¹ *Cairns Post*, 2 September 1940. Accessed via www.trove.nla.gov.au

⁶² *The Australian Abo Call*, 1 August 1938. Accessed via www.trove.nla.gov.au

⁶³ Pers Comm S 14T(1)(d), S 14T(3)(a).

and resulted in the loss of cultural knowledge, breakdown of tribes and breakdown of family relations.

3.3 Overview of European Land Use

3.3.1 Exploration

Despite being passed by both Cook and Flinders during their voyages, it was not until the 1820s that the Richmond River was discovered by Europeans. Settlement beyond the main centres of population had begun by this time with the establishment of penal colonies at Port Macquarie in 1821 and Moreton Bay in 1826.⁶⁴ In 1827, the *HMS Rainbow*, under the command of Captain Henry Rous and accompanied by Governor Darling, left Sydney employed with the task of inspecting the new settlement at Moreton Bay. Also of interest to the party was the exploration of the coastline for signs of large fertile river valleys that were presumed to drain from the coastal mountain range.⁶⁵ The discovery of new rivers was important to the colony in order to provide prime agricultural land and the means to transport goods to Sydney, however, despite passing the Richmond River twice; it was not until the following year that Rous became the first European to discover the mouth of the river.

At the same time as this first journey of Rous, an explorer named Allan Cunningham was engaged on the journey during which he discovered the Darling Downs, explored the headwaters of the Richmond and reached Mount Warning.⁶⁶ Despite the work of Cunningham, it is officially recognised that Rous's second journey on *HMS Rainbow* led to the discovery of what was to be named the Richmond River on August 26, 1828. Upon discovery of the mouth the party dropped anchor and set about charting the entrance way and inner banks of the river.⁶⁷ As the party ventured up river they noted the good depth of the channel at the present location of Wardell and the abundant tall forest lining the banks and continuing inland.⁶⁸ Rous named the new river Richmond in honour of his friend the then Duke of Richmond and Lennox.⁶⁹ The only other Europeans to venture into the region around this time were convicts from Moreton Bay that had absconded whilst working cutting timber around the Tweed River. The log of the *Rainbow's* 1828 voyage makes mention of nine convicts, presumably from the north, that were in a desperate condition as a result of their struggles to survive in the harsh terrain of the region.⁷⁰

⁶⁴ Vader. J. 2002. *Red Gold: The Tree that Built a Nation*. New Holland Publishers. Sydney. P. 144.

⁶⁵ Daley. L. T. 1966. *Men and a River: A History of the Richmond River District 1828-1895*. Melbourne University Press. Melbourne. p.9.

⁶⁶ Lismore Centenary of Local Government Committee. 1929. *The Story of Lismore*. Reprinted in-*Lismore 100 A Century of Local Government 1879-1979*. Lismore City Council. Lismore. p.4.

⁶⁷ Daley. *Ibid.* p.11-12.

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

⁷⁰ Vader. J. *ibid*

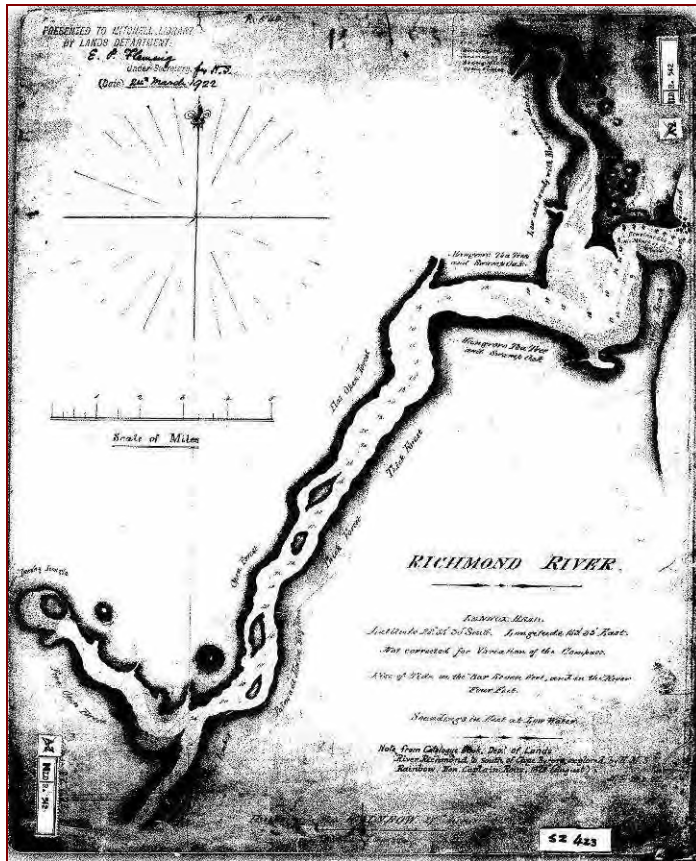


Figure 15: Rous's chart of the lower Richmond River.

3.3.2 Cedar Getting

Pictorial representations of the early colony in Sydney illustrate how heavily the new arrivals relied on the supply of local timber. Settlers found it difficult to adapt to the exotic woods, however, it was not long before one local timber was found that suited the needs of the growing colony: Australian Red Cedar. As areas of forest around Pitt Town and Wilberforce were felled for market gardens and other stands of cedar along the Hawkesbury were found, the quality of the timber led the Admiralty in England to request that as much as possible be exported.⁷¹ Such was the demand for Australian cedar that by 1795, Governor Hunter imposed restrictions on the felling of the Hawkesbury River stands.⁷² These restrictions, coupled with the lucrative nature of the trade in cedar, drove timber getters to look further afield for supplies, setting up camps to the north along the Hunter by 1801 and to the south into the Illawarra not long after.⁷³

By the early 1840s, the industry had expanded north into the Macleay and Clarence River valleys. Further Government regulation, along with the expansion of large stations occupied by squatters in the Clarence valley, restricted the access of cedar getters and forced cutters to look elsewhere for unexploited stands. In 1842, a party of cedar getters led by Steve King and Joe Maguire explored the Richmond River and found significant stands ripe for commercial exploitation.⁷⁴ The news of these vast stands brought cedar getters to the area,

⁷¹ *Ibid.* p.21.

⁷² *Ibid.* p.27.

⁷³ *Ibid.* p.40.

⁷⁴ Daley, L. T. *Ibid.* p.30

with camps established to the north and west of the future site of Ballina. One of these early camps was along Terania Creek to the west of the study area.⁷⁵

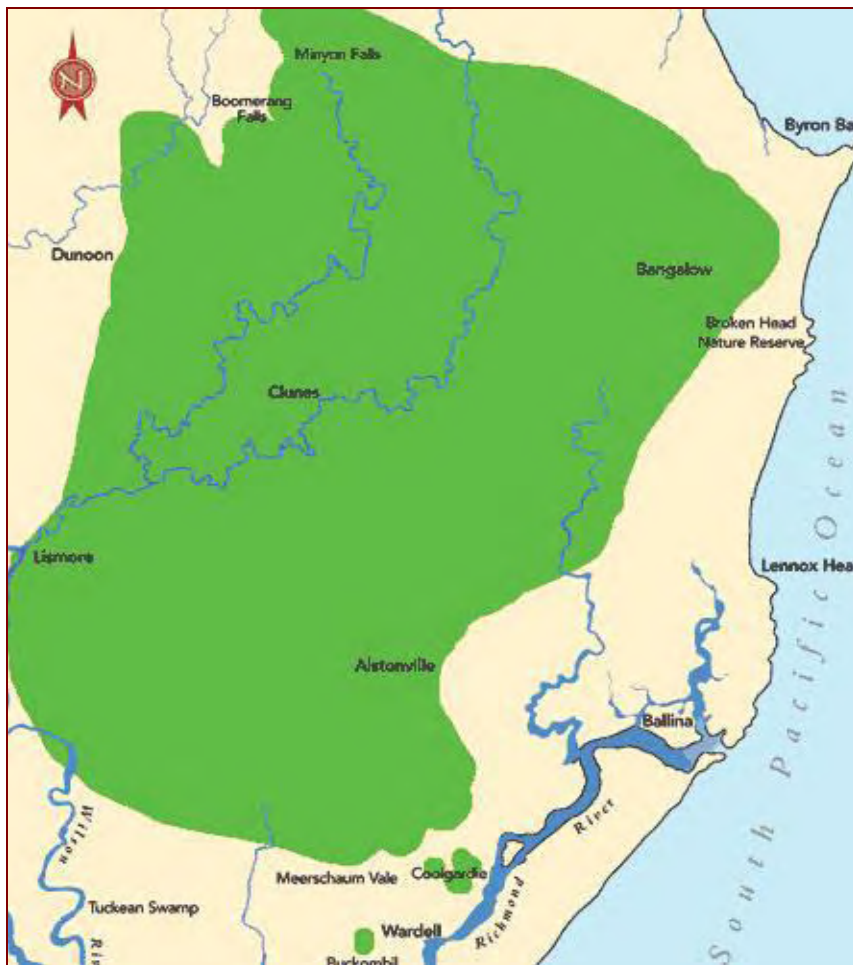


Figure 16: The maximum extents of the Big Scrub (RainforestRescue.org.au).

The logistics of transporting the felled timber dictated that the early operations be situated close to the sea and concentrated along river and creek systems. By the 1850s, cedar getters (including a Scotsman named Duncan Currie, who was to later be the first man to take up land in the parish of what he called Dunoon) had set up camp at what was then called Bald Hill (now Bexhill).⁷⁶ These cutters' worked the stands along the creeks in the immediate area such as Cooper's, Boomerang, Little Dan and Little Cooper's and their activities led to increasing development in the area.⁷⁷

Over the next twenty years, cedar getting was established as the dominant economic activity in the area surrounding the study site and led to Ballina becoming an important port, as eventually the Richmond River came to export two thirds of the colony of NSW's cedar.⁷⁸ This important resource was the economic engine that drove the first wave of white settlement in the area, however it could not last, as the pace of the felling began to deplete the reserves of the once enormous Big Scrub, the local name for the huge stand of sub-

⁷⁵ Olley, W. J. 1995. *Squatters on the Richmond: Runs, Owners and Boundaries from Settlement to Dissolution*. William J. Olley. p.32.

⁷⁶ Finlayson, M. 1976. *History of Dunoon*. Text of a talk given to the RRHS 12/9/1976. RRHS Dunoon History File.

⁷⁷ Heritage Concepts for Parsons Brinkerhoff Australia Pty Ltd. 2006. *Aboriginal and Historic Archaeological and Cultural Heritage Assessment and Statement of Heritage Impact-Rous Water Lismore Source*. Lismore. p.27.

⁷⁸ Hall, G. 1983. *Port of the Richmond River, Ballina 1840s-1980s*. Ballina Shire Council. Ballina.

tropical rainforest that extended across much of the Alstonville Plateau and nearby areas. By the 1890s, a new wave of settlers, enabled by the *Robertson Land Act of 1861*, had led to a shift in the economic base of the area as dairying became the dominant industry.

3.3.3 Pastoral Industry

The study area and immediate surrounds were not suitable for grazing and, consequently, this industry did not play a direct role in its history. Despite this, the following discussion will briefly outline the development of the pastoral industry in the wider region as it is part of the contextual history of the Northern Rivers.

Squatters were sheep or cattle graziers that, up until the 1850s, occupied large areas of Crown land suitable to their needs. From 1837, squatters could lease land from the NSW government by paying a licence fee of ten pounds per annum.⁷⁹ By 1845, licences had been granted for 21 pastoral runs in the Richmond Valley, however the subtropical climate and terrain of the study area and immediate surrounds were not conducive to grazing and subsequently many of the runs were abandoned.⁸⁰ With the passing of the *Robertson Land Act* in 1861, the study area became attractive to selectors intent on smaller operations such as cropping and dairying. Graziers' Runs established around the Casino area and areas further west were more successful.

3.3.4 Dairying

The first dairy in the colony was established by 1805 and by 1820, Sydney was supplied locally with all its milk, cheese and butter.⁸¹ Dairying developed relatively late in the Northern Rivers region, as dairy markets needed to be close to suppliers and easily reached prior to refrigeration, which was difficult in a remote forested area. Early production of milk and butter was undertaken on a domestic or localised scale until transportation improved to a point where products could reach market before spoiling.⁸²

One of the factors that played a role in driving the dairy industry, and settlement in general in the study area and surrounds, was the changes made to the laws governing the purchase of land in the 1860s. The *Robertson Act 1861 (NSW)* made free selection of Crown land possible for anyone. The *Crown Lands Alienation Act 1861 (NSW)* dealt with the sale of land and the *Crown Lands Occupation Act 1861 (NSW)* dealt with leasing. The Occupation Act permitted any person to select up to 320 acres of land and purchase the freehold (with the exception of urban land). Prior to this, powerful squatters had managed to acquire vast amounts of the colony's prime land through, initially, illicit occupation. The Occupation Act opened up these squatter-held lands for selection by anyone in the colony⁸³ On the North Coast, farmers that selected land initially concentrated mainly on growing maize (corn) or sugar cane.⁸⁴ The village of Corndale takes its name from the fact that early settlers in the area grew corn for commercial sale and pig fodder. Some early farmers were interested in setting up a dairy as part of their farm, but there was only a limited local market, and

⁷⁹ <http://www.liscity.nsw.gov.au> Feilding. L. D. no date. *Introduction to a History of Lismore*. Accessed 5/1/2011.

⁸⁰ *Ibid.*

⁸¹ <http://www.richhistory.org.au/district-history-dairy.htm> Henderson. M. no date. *Downturn at the Dairy (Part 1)*. Accessed 5/1/2011.

⁸² Heritage Concepts for Parsons Brinkerhoff Australia Pty Ltd. 2006. *Ibid.* p.29.

⁸³ Department of Lands website

⁸⁴ <http://www.richhistory.org.au/district-history-dairy.htm> Henderson. M. no date. *Downturn at the Dairy (Part 1)*. Accessed 5/1/2011.

transport was difficult.⁸⁵ As it was important to get a quick return, land had to be cleared and utilised quickly, and dairying was too slow and time-consuming. However, the 1880s saw the introduction of factors that were to lead to the creation of a thriving dairy industry in the area.

The first of these factors was an influx of experienced dairy farmers from the south, especially during the late 1870s. The dairying industry had been established on the South Coast of New South Wales for some time, but farmers were dissatisfied, partly because many did not own their properties and land was expensive.⁸⁶ Landowners were asking higher rents or sometimes a share of the farmer's income. Many of these farms had been set up originally on the English model of paternalism, with tenant farmers. These farmers saw the opening up of productive land on the North Coast as a chance at independence as well as profit.⁸⁷

The introduction of new technology was another factor that drove the growth of dairying. In 1873, Thomas Mort developed the first commercial refrigeration plant in Sydney. Refrigeration was vital to the development of the dairy industry, as the main butter markets were overseas and thus the introduction of ships with refrigerated holds gave Australian farmers access to this trade.⁸⁸ In the early 1880s, the first Danish made separators arrived in NSW, with these machines having the advantage of milk no longer having to sit while the cream rose to the top to be skimmed off, which saved a lot of time and produced cream of a higher quality.⁸⁹ However, these machines were expensive and thus were beyond the means of small scale farmers, such as those that had begun to select land around the study area. Farmers solved the problem of lack of access of individuals to complex technology by forming co-operatives.⁹⁰

The Pioneer Butter Factory was opened at Kiama on the south coast of NSW in 1884. This factory was owned by local dairy farmers that had formed a co-operative and was the beginning of the co-operative movement in dairying in NSW.⁹¹ On 18 June 1887, a meeting of dairy farmers was held at Wollongbar on the North Coast, with the aim of forming a cooperative similar to the ones on the South Coast.⁹² By 1889, three north coast co-operatives were established to produce butter and smaller cream separating stations were built to reduce travelling times for farmers.⁹³ At Dunoon, adjacent to the study area, a co-operative butter factory was formed in 1891. After operating for a couple of years, the directors sold the concern to the NSW Creamery Company, which in turn failed after a few years and the North Coast Co-op. Company formed a branch at Dunoon.⁹⁴ These developments facilitated the formation of villages and towns, as farmers waited for their milk to be processed other business could be conducted, thus leading to the development of commercial centres around the stations.

⁸⁵ *Ibid.*

⁸⁶ <http://www.richhistory.org.au/district-history-dairy.htm> Henderson. M. no date. *Downturn at the Dairy (Part 2)*. Accessed 6/1/2011.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*

⁹¹ *Ibid.*

⁹² *Ibid.*

⁹³ *ibid.*

⁹⁴ Finlayson. M. *Ibid.*



Figure 17: The Dunoon Butter Factory, built by Norco around 1914.

By the 1890s, dairying was the major economic activity in the study area and surrounds. Sugar production was another industry that had developed on the north coast during the 1880s, however, the insecurity of that industry had seen many sugar farmers change to dairy production.⁹⁵ By the last stages of the nineteenth century, Richmond River suppliers were exporting dairy products to Britain and the introduction of smaller scale separators and pasteurisation, by the early twentieth century, led to further improvements in the industry.⁹⁶ The introduction of new pasture crops, such as Paspalum grass, improved yields and led to the increasing dominance of dairying, particularly in the study area and immediate surrounds, over other economic endeavours.

Dairying continued this dominance throughout the first half of the twentieth century, however, wages and machinery costs had been increasing and many farmers relied on the free labour of family members to keep their farms going.⁹⁷ The work was hard, with cows needing milking twice daily and very little opportunity for holidays. This meant that it was difficult to persuade younger people to work the farms and, by the 1960s, the average age of a dairy farmer on the North Coast was fifty five, with many farmers considerably older.⁹⁸ Additionally, the industry was increasingly regulated and many smaller farms did not meet the required standards and could not afford the upgrades needed to comply. Economies of scale meant that small scale dairy concerns could not compete with the larger businesses that had become part of agriculture. These factors led to the disappearance of the independent dairy farmer on the North Coast. Many of the small villages have now gone, or are part of the tourist trade which is now the dominant industry on the North Coast. Some of the small holdings have been subdivided or are run as hobby farms by people who have moved to the North Coast looking for a change of lifestyle. In the immediate study area, many of the dairy farms have been aggregated together and planted with macadamia trees, with Dunoon now known as the centre of the macadamia industry in Australia

3.3.5 The Banana Industry and Later Development

The first Italian farming community in Australia was established at New Italy, near Woodburn, in the 1880s.⁹⁹ These settlers moved to the New Italy area after hearing from

⁹⁵ Heritage Concepts for Parsons Brinkerhoff Australia Pty Ltd. 2006. *Ibid.* p.30.

⁹⁶ *Ibid.*

⁹⁷ <http://www.richhistory.org.au/district-history-dairy.htm> Henderson. M. no date. *Downturn at the Dairy (Part 5)*. Accessed 6/1/2011.

⁹⁸ *Ibid.*

⁹⁹ Pesman. R. and Kevin. C. 1998. *A History of Italian Settlement in NSW*. NSW Heritage Office. Sydney. p. 21.

another Italian, Rocco Caminiti, that the soil and water supply were favourable.¹⁰⁰ As soon as they arrived they set to work building cabins from the logs, bark and foliage around them. They then began clearing, ploughing and sowing the land and, during the next six years, orchards, vineyards and tilled paddocks replaced the dense bushland that the settlers had initially encountered.¹⁰¹

Closer to the study area, the period from the early 1930s to the 1960s saw an influx of Italian migrants keen to make a living for themselves farming bananas. By the late 1930s, banana plantations had been established all along the top of the hill dividing Tuntable and Terania Creeks and all along the top of Rose Road.¹⁰² Land to the east, including the study area, was also planted with bananas by Italian migrants. At the time, life was very difficult in Italy as there was very little work available, with this factor driving migrants to seek work in countries such as America and Australia.

Upon arrival, these migrants had few resources and thus could not afford to purchase land, so they usually leased around ten to twelve acres and cleared it, dug it by hand and planted bananas.¹⁰³ The land chosen by these farmers was often an area considered unproductive by the landholder. Many of these farmers erected small huts on their leasehold, and these were typically temporary structures made from hardwood which shrank and left gaps in the walls, with hessian bags were hung over the windows.¹⁰⁴ Life in their adopted country was not easy, particularly as most could not speak English, which made communication difficult. Many attended night classes in English which were held by Cyril Ray and Wally Gates at Tuntable Creek School¹⁰⁵

Once they had become established and begun to make a reasonable income from their farms, some of the families sponsored other men from Italy to come to Australia. These men worked for their sponsor until they were able to pay back the money, with a further surge of Italian migration occurring in the 1950s.¹⁰⁶ A new migration agreement between the Italian and Australian Governments was signed in 1951 and Italians no longer needed a sponsor or an agreed amount of money to come to Australia.¹⁰⁷ Italy was of the opinion that only mass migration would allow the country to recover from the devastation of war, while the Australian Government of the time felt that Australia had to 'populate or perish'.¹⁰⁸

By the end of the 1960s, most of the families that had originally leased land had made enough money to purchase their own properties elsewhere.¹⁰⁹

3.4 Site Specific History

3.4.1 European Settlement of Dunoon and Surrounds

Duncan Currie, who followed his brother Archibald, was one of the first Europeans to take up land in what was to become the Parish of Dunoon. Currie had arrived in Australia from Scotland in 1831 and in the late 1850s was part of a group of cedar getters who set up camp near Bexhill.¹¹⁰ In 1871, Currie selected six hundred and ninety acres, extending from near

¹⁰⁰ *Ibid.*

¹⁰¹ *Ibid.*

¹⁰² Barratt. P. 1999. *Around the Channon- A history of its places and people*. Colourmatch Printers. Ballina. p. 94.

¹⁰³ *Ibid.*

¹⁰⁴ *Ibid.*

¹⁰⁵ *Ibid.*

¹⁰⁶ *Ibid.*

¹⁰⁷ Jenkins. L. 1993. *Power of the Land-A social history of Italian settlement in Lismore*. Northern Star printery. Lismore. p. 177.

¹⁰⁸ *Ibid.*

¹⁰⁹ *Ibid.*

¹¹⁰ Finlayson. M. *Ibid.*

the boundary of North Lismore to near the present village of Dunoon (to the south of the study site). One portion of this selection was within the Parish of Dunoon, with the remainder in the Modanville area. His original home was situated on the western side of the Lismore – Dunoon Road at the seven mile peg and his second homestead was known as ‘Dunoon House’ and still stands, though it is now known as ‘Craiglee’.¹¹¹ The parish of Dunoon was named after Currie’s birthplace in Scotland, however there was some conjecture in the local press in the early twentieth century that the name is taken from a local Aboriginal word. This was strongly refuted by an early settler, who reported to the paper that he was present at the Lands Department when the official asked Currie what name did he want to give the parish he had just taken up land in.¹¹²

In the same year as Currie’s selection (1871), the study site was part of approximately forty-six square miles of land that was declared a reserved forest, known as Clarence Forest Reserve Number Eight.¹¹³ Land to the south and east of the study area, in the vicinity of the current site of the Dunoon village, remained available to selectors with the following people selecting land from 1879: J.E. James, James Bradi, Bill Moore, Fred Hall, Messrs Hoare, John Thompson, R.Y. Arthur, John Schaffer, Bob Brough, George Sargent, William Caisley, Peter Tainch, Sam Beardow, Daniel Duffy, William Pitt, Charles Dorrrough and Henry Caisley.¹¹⁴ This settlement began the development of Dunoon as a village with the first school built in 1884 and a post office established in 1886, in the home of a Mr James Edgar James. However, it was not until the early twentieth century that the town could be regarded as a commercial hub.¹¹⁵

Early activities in Dunoon revolved around cropping, however by the 1880s, dairy had started to become the dominant industry of the town. The study site remained heavily forested and undeveloped until 1888, as the land on the eastern side of Rocky Creek became available for selection when part of the Clarence Forest Reserve was revoked.¹¹⁶

3.4.2 Selection of Land Comprising the Study Site

The NSW Government Gazette of seventeenth November 1888 details the revocation of part of the Clarence Forest Reserve, which included that part of the study site situated on the eastern side of Rocky Creek.¹¹⁷ This opened up that area for selection, however, the first acreages were not taken up for another eleven years, which probably reflects the desirability of the land in comparison with other areas surrounding the study site. The first selections were made by two cousins, Dougal and Thomas McKinnon, who selected 77 and 75 acres in 1897 and 1898 respectively, comprising portions 44 and 43 (see Figure 16).¹¹⁸

¹¹¹ *Ibid.*

¹¹² Cutting from local press 1905. In RRHS Dunoon History File.

¹¹³ NSW Government Gazette. 15/9/1871.

¹¹⁴ Finlayson. M. *Ibid.*

¹¹⁵ *Ibid.*

¹¹⁶ NSW Government Gazette. 17/11/1888.

¹¹⁷ *Ibid.*

¹¹⁸ <http://www.parishmaps.lands.nsw.gov.au> Image No. 14926903. Accessed 15/12/2010.



Figure 18: Parish Map of Dunoon drawn c.mid 1890s (no date is given on map). The blue line shows the approximate location of the proposed dam wall and the blue square the approximate location of the Fraser Road Homestead.

Figure 16 shows the blocks that comprise the first selections made on the study site. Tracking south from portion 43, selections were made by Donald McPherson in 1889 and 1890, comprising portions 42 and 41 and William Munro in 1890, comprising portion 40. The map does not record the name of a selector of portion 39, however, a later map records that by 1901, that land was in the possession of the Citizens Life Assurance Company Ltd, thus it may be that the selector mortgaged or forfeited the land to this company, as it would be unlikely that this company was the original purchaser. Portion 192 (directly west of portion 39) was selected by A. J. Caisley in 1901.¹¹⁹

The land comprising the study site to the north and west of Rocky Creek became available for selection from 1904. Alexander Fraser won the right to select the 146 acres of portion 178 in a ballot that took place on 13/10/1904, while his relative Gordon selected portion 186 later in the same year.¹²⁰ Alexander Fraser was granted his deed in 1922, but he moved with his family to Lismore where he became a rural agent.¹²¹ The land within the study site to the south of portion 186, on the western side of Rocky Creek, was selected from 1907 as follows: G.H. Knight portion 195 in 1907; George King portion 196 in 1907; C. D. Beardow portion 197 in 1907; and H. L. L. McPherson portion 198 in 1910 (see figure 17).¹²²

One of the first settlers William Munro, who is commemorated by the naming of Munro Road, is one of the most notable of the early landholders, according to a 1932 article entitled 'Dunoon Pioneers Honoured' which refers to Munro and his wife as 'the father and mother of Dunoon'.¹²³ The same article describes Munro's holdings in the Dunoon area as "310

¹¹⁹ <http://www.parishmaps.lands.nsw.gov.au> Image No. 10713501. Accessed 15/12/2010.

¹²⁰ Matthews, D. 2010. *The History of Fraser Road, Dunoon*. In *The Dunoon and District Gazette*, October/November 2010 available at <http://dunoongazette.org/history-fraser-road-dunoon>

¹²¹ *Ibid.*

¹²² Based on a comparative study of parish maps available at :<http://www.parishmaps.lands.nsw.gov.au>

¹²³ Article titled *Dunoon Pioneers Honoured*. File on William Munro RRHS.

acres of beautiful dairying country, 230 acres of it big scrub land and 80 acres heavily timbered forest".¹²⁴ Another note on the file on the Munro family kept by the RRHS records that Munro kept 80 acres of his Dunoon property for its timber, thus it is presumed that this refers to the 80 acres Munro selected in the study area.¹²⁵ In fact, the only residences erected within the study site during the early years of occupation were those built by the McKinnon cousins on their respective portions and these survive, with some alteration, on this land today.¹²⁶ Apparently the escarpment was so steep that the materials for Thomas McKinnon's home were slid down the steep hillside.¹²⁷



Figure 19: Parish Map 1904-1907 showing Fraser's selection. The blue line shows the approximate location of the proposed dam wall and the blue square the approximate location of the Fraser Road Homestead.

3.4.3 Development During the 20th Century

Dairying was to remain the dominant activity in the study area for much of the 20th Century. A separating station was established at Dunoon in 1891, on the property opposite the Whian Whian turnoff.¹²⁸ This station was closed in 1898 and one was commenced in the village of Dunoon, diagonally opposite the Public Hall, which in turn closed in 1903 after disagreements among the farmers that used the station.¹²⁹ By this time, home separators were appearing on the market and, between 1903 and 1913, the cream was collected from individual farms and taken to the co-op factory in Lismore. In 1910, Dunoon suppliers asked the company to establish a branch in Dunoon and moves for an amalgamation with Lismore were started.¹³⁰ The factory was opened in 1914 with the Northern Star reporting,

¹²⁴ *Ibid.*

¹²⁵ RRHS file on the Munro family.

¹²⁶ Matthews. D. pers com.

¹²⁷ Matthews. D. 2010. *History of Fraser Road, Dunoon.* *Ibid.*

¹²⁸ Finlayson. M. *Ibid.*

¹²⁹ *Ibid.*

¹³⁰ *Ibid.*

“...prominent amongst those localities of the Richmond River district which have kept well to the fore in the great wave of progress and prosperity which came with the introduction of dairying, must be counted the Dunoon. Both the village and surrounding countryside give striking evidence of this, but proof was given yesterday in the opening of the thoroughly well equipped and up to date branch factory of the North Coast Co-operative Ltd.”¹³¹

By the 1920s, Dunoon was the centre of a dairy farming community with 4 churches, 2 general stores, a bank, a butcher’s shop, a post office with a manual telephone exchange, a barber’s shop, a tobacconist and a billiard room.¹³² In 1925, a fire destroyed many of the businesses in Dunoon and this event coincided with a downturn in the dairy industry, which continued through the depression and did not improve until after WW2.¹³³ The butter factory at Dunoon was closed in 1958 and dairying declined over the next twenty years, to be replaced by macadamia production as the dominant agricultural activity of the area.

Within the study area, little development occurred after the decline of dairying. A causeway where Fraser Road crosses Rocky Creek was constructed in the 1930s using ‘relief work’, which was a way the Government supplied work for those left unemployed by the depression.¹³⁴ In the latter half of the 20th Century, a poplar plantation was planted on the right hand side of Fraser Road on the edge of the study site to supply a match factory in Grafton.¹³⁵ The factory subsequently closed, however, the plantation is still evident. Much of the land on the western side of Rocky Creek within the study area has remained forested, presumably due to the steep nature of the terrain. There was also an influx of Italian migrants to the surrounding area from the 1930s to the 1960s and these people set up banana plantations (see previous discussion). This is reflected in the title documents of portion 39 within the study area. These documents show that portions of this lot were leased to Angelo Badolato, Carmelo Tripoloni, Lizziano Presotto and Amaro Bonomini in 1953-1954 for the purpose of banana farming.

¹³¹ Northern Star 30/1/1914.

¹³² Ezzy. F. No date. *Description of Dunoon*. RRHS Dunoon History File.

¹³³ Finlayson. M. *Ibid.*

¹³⁴ Matthews. D. pers comm.

¹³⁵ *Ibid.*

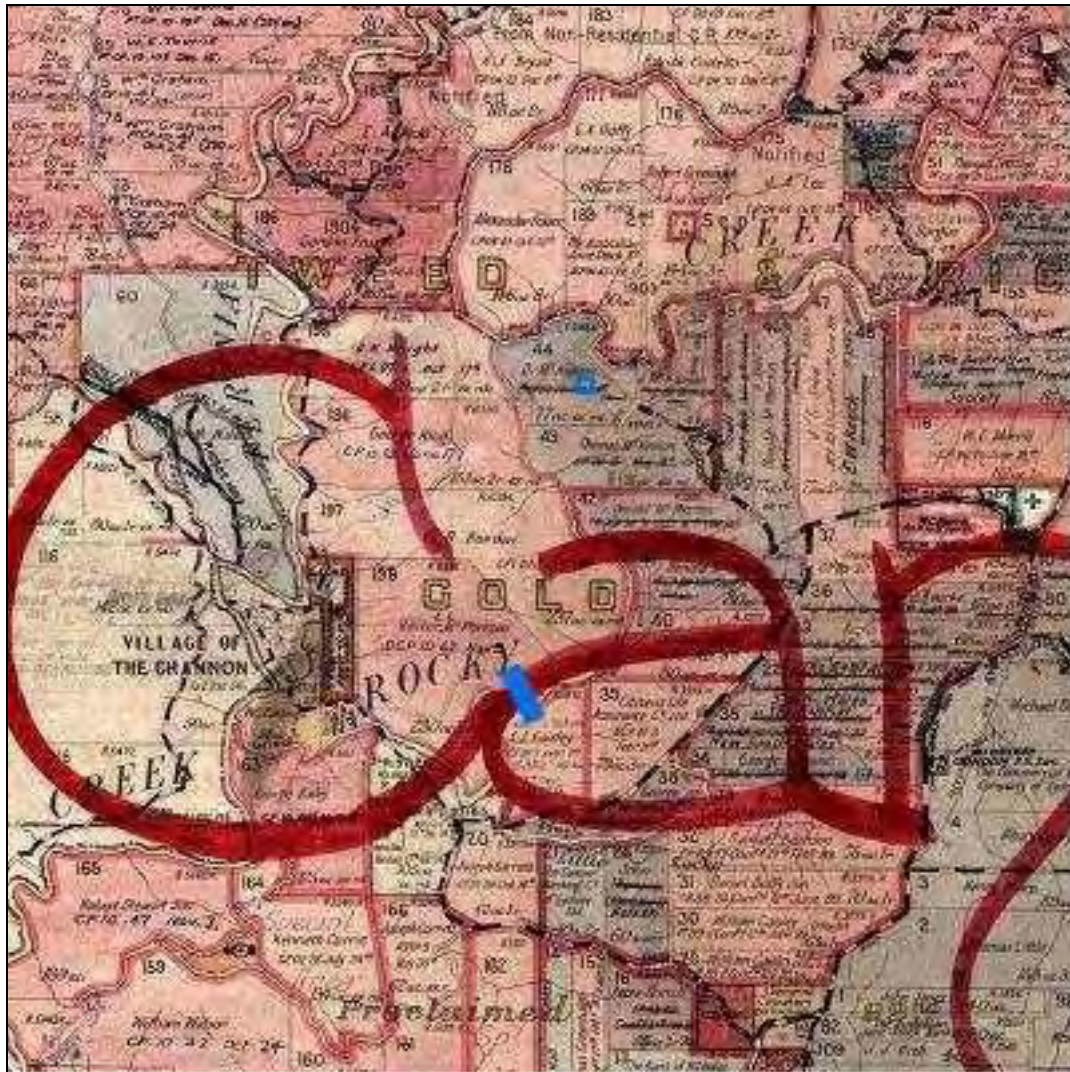


Figure 20: Parish Map dating from the early 20th century (c.1914) showing the selections made from 1907 on the western side of the creek. The blue line shows the approximate location of the proposed dam wall and the blue square the approximate location of the Fraser Road Homestead.

3.5 Previous Archaeological Studies

Several previous studies, which had investigated areas in the general region in which the proposed Dunoon Dam lies (but not within the dam area or catchment as no archaeological or heritage studies had been undertaken there in the past), were examined. These reports included:

- Collins, J. 1992. *Byron Shire Aboriginal Heritage Study*. Byron Shire Council;
- Collins, J. P. 1993. *Lismore Flood Levee System: An Archaeological Assessment*. WBM Oceanics Australia;
- Sciusco, L and Harrison, R. 2006. *Aboriginal and Historic Archaeological & Cultural Heritage Assessment & Statement of Heritage Impact*. Report prepared for Rous Water by Heritage Concepts, Sydney.
- Gorman, A. C. 1998. *An Archaeological survey at the NRTV Broadcast Site, Parrott's Nest, Near Lismore, NSW*. University of New England;

- Piper, A. 2000. *An Archaeological Assessment of the Skyline Road/Durheim Road, Monaltrie, Lismore, NSW*;
- Fox, I. 2008. *Preliminary Archaeological Overview for Proposed Raising of Clarrie Hall Dam*. Southern Cross University;
- Fox, I. 2008. *Goonellabah and McLeans Ridges: Heritage Assessment*. Converge Heritage;
- Alexander, M. 2010. *South Lismore Sewer Trunk Main Cultural Heritage Assessment*. Ainsworth Heritage;
- Williams, D and Alexander, M. 2010. *South Lismore Sewer Trunk Main Carriageway Cultural Heritage Assessment*. Ainsworth Heritage;
- Mills, R. 1998. *Report of Sub-Surface Testing for the Alstonville Bypass*. Archaeological and Heritage Services; and
- Stone Pathway Terrania Creek 1978. Site inspection notes.

The 1993 Collins report was part of a wide Aboriginal Archaeological survey of the banks of the Wilsons River, prior to the planned construction of a flood levy system for the protection of Lismore. Although a wide area was searched, only one artefact (a small flake that had also been used as a core) was located in a ploughed field in the western outskirts of Lismore.¹³⁶ However, additional information gleaned in discussion with the local Aboriginal people indicated that the area had seen pre- and post-contact camping by large numbers of local Aboriginals. Collins was then able to identify a series of camp sites, burial areas and *djurebil* (increase sites, used for ceremonies for increasing the amount of a certain resource in the area) in the following locations:

- Lismore Showground (battle site, camp ground and echidna *djurebil*);
- Near Robert White Bridge (displaced Aboriginal campsite);
- Carlton Park Racecourse (burial area);
- North Lismore Cemetery (burial area);
- Hospital Hill (camp site);
- St. Carthage's site (camp site);
- Courthouse Hill (camp site); and
- East Lismore (battle site)¹³⁷.

Collins also mentions three surveys, made prior to her survey, of long narrow corridors where only one, a survey of 99km between Grafton and Lismore, located sites, of which 5 small artefact scatters were found. All of those five sites were located on ridges or on elevated ground above water courses.¹³⁸

The Sciusco and Harrison report examined a 1km stretch of pipeline and two pumping stations at Howard's Grass, immediately to the north of Lismore on the Wilson River as well as a 14km stretch of pipeline running from Bexhill north through Corndale to Nightcap Water

¹³⁶ Collins, J. P. 1993. *Lismore Flood Levee System: An Archaeological Assessment*. WBM Oceanics Australia. p.26.

¹³⁷ Collins, J. P. *Ibid.* pp.15-18.

¹³⁸ Collins, J. P. *Ibid.* p.18.

Treatment Plant at the Rock Creek Dam. Several potential landscape features were identified, but no items of Aboriginal Heritage were located during the survey.¹³⁹

Gorman's assessment of the Parrott's Nest area, near to a sacred site associated with the local Hoop Pine, located no materials during the survey but did view and record three flakes and a small core that had been collected at an earlier time by a local landowner.¹⁴⁰ The Parrott's Nest site was a place where a person could curse another by using a certain Hoop Pine there. The site was maintained by the *Weeong*, the Clever Men (called *Cooradgi* in Gorman's report), to keep it safe and is now a registered Aboriginal Place and an exceptionally important site for the local Aboriginal People.¹⁴¹

Piper, in 2002, surveyed an area just to the south of Lismore and discusses 10 earlier surveys carried out across the wider region, with only two recording any cultural materials: one within the Alstonville Plateau and another at Terania Creek. Although no materials were found during the survey, [§ 14T(3)(a), § 14T(3)(b)], who accompanied Adrian Piper, indicated an area where Swamp Mahogany was once prevalent, a tree that was very important for the local Aboriginal Peoples for the harvesting of its bark.

Fox's report of 2008, which dealt with sites at Goonellabah and McLean's Ridges, was also unable to locate any visible archaeology; however, Fox, through consultation with the local Aboriginal Community, was able to determine that the area had potential for Aboriginal Archaeology to be present and had been used as a major pathway through the landscape.

Fox's other report, although from the Tweed Valley, shows the potential of the landscape in full. The survey of the land around Clarrie Hall Dam, located eight sites in addition to the twenty-one already known sites of the area, including rock shelters, numerous artefact collections and modified trees.

Alexander and William's reports, which surveyed the South Lismore Sewerage Pipeline, describes 17 sites along the route, and although not in close proximity to the current study area, the report highlights the proximity of the survey areas to the route from the Tucki Tucki Bora Ground to Blue Nob, Nimbin Rocks and Wollumbin as a major pathway. The two studies found 20 separate sites along the route, consisting of scarred trees, grinding grooves, artefacts, carved stones and a quarry. The study also highlights the potential for stone grinding sites and quarries utilising the local basalts, and the Aboriginal significance of the ridgeways, such as those noted in Fox's assessment.

Although Collins 1992 study focused on the Byron Shire, it looked at site distribution and typology across the entire North Coast, noting at the time that approximately 1,000 sites had been located within the entire region.¹⁴² Collins describes that following general sites types and their distribution:

- Rockshelters and Art – The report noted that several shelters had been recorded, including one at Terania Creek, near to the current survey and that the volcanic and rugged plateau was an ideal place for their location. The report also noted that art sites were extremely rare in the region;
- Open Campsites – These were determined to be one of the most common site types in the northern rivers, accounting for 31% of all recorded sites;

¹³⁹ Sciusco, L and Harrison, R. 2006. Aboriginal and Historic Archaeological & Cultural Heritage Assessment & Statement of Heritage Impact. Report prepared for Rous Water by Heritage Concepts, Sydney.

¹⁴⁰ Gorman, A. C. 1998. *An Archaeological survey at the NRTV Broadcast Site, Parrott's Nest, Near Lismore, NSW*. University of New England. p.18.

¹⁴¹ Gorman, A. C. 1998. *Ibid*. p.18.

¹⁴² Collins, J. 1992. *Byron Shire Aboriginal Heritage Study*. Byron Shire Council. p.37.

- Middens – accounted for another 32% of sites types but were concentrated along the coast, however many have been lost to sand mining, development and erosion;
- Quarry Sites - although only two were noted in the report, at Doon Doon, east of Dunoon and at Murwillumbah, they were noted to have the potential to be far more numerous in the volcanic plateau areas;
- Carved and Scarred Trees - at the time of the report, only one scarred tree was noted, however, other reports have found scarred trees since that time;
- Burials – Twenty burials were noted in the report, with half along the coast and half within the hinterland. The report does not mention whether these were single or multiple burials. Practices noted were of bodies buried in an tightly bound upright position, sometimes wrapped in bark and at times marked with earth or stone mounds;
- Bora Grounds – Twenty-two were mentioned in the report, spread across the region, with most consisting of a pair of rings, one larger than the other and both connected with a pathway. The report noted that all the known rings at the time of the report had been destroyed over time;
- Stone Arrangements – Two stone arrangements have been noted in the region but none have survived development activities;
- Grinding Grooves - the report noted that only one groove site had been located in the region at the time; and
- Natural Mythological Sites – These sites, of which 16 were recorded at the time of the report were scattered across the landscape and related to important natural features such as Nimbin Rocks or Wollumbin (Mt. Warning).

Mills report of the Sub-Surface Testing for the Alstonville Bypass noted that four Potential Archaeological Deposits (PAD's) had been located and that impact by the planned route was expected on one of the PAD's. The one PAD that was investigated, by auguring, revealed only 5 stone tools, not allowing any real conclusions beyond establishing the presence of Aboriginal occupation.

The Stone Pathway investigation at Terania Creek in 1978 was an investigation into the providence of a stone lined track at the head of Terania Creek. The track was determined to have been of likely European original and not an Aboriginal site.

3.5.1 Traditional Knowledge

During consultation discussions regarding the proposed Dunoon Dam, several sites were noted in the vicinity however were not registered on the AHIMS database. S 14T(1)(d), S 14T(3)(a), S 14T(3) provided information regarding several unlisted sites nearby:

- S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)
[REDACTED]
- S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)
[REDACTED]
- S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)
[REDACTED]
[REDACTED]
[REDACTED]

- S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)
[Redacted]
[Redacted]
- S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)
[Redacted] and
- S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b)
[Redacted]
[Redacted]

4.0 FIELDWORK METHODOLOGY AND RESULTS

4.1 Register Searches

Searches of the Aboriginal Heritage Information Management System (AHIMS) database, the Commonwealth Heritage List, National Heritage List, Register of the National Estate, NSW Heritage Register, NSW Heritage Inventory and Lismore LEP were all undertaken to determine the locations of known heritage items. This information was mapped, along with information from previous reports, pertaining to nearby sites.

No sites of non-Aboriginal Heritage were found to be within or sufficiently close to the proposed Dam Site, its inundation areas, environmental buffer or catchment to be cause for concern as shown in Figure 20.

The following items were identified by the AHIMS search as being within 20km of the Proposed Dunoon Dam and are shown in Figure 19:

Site ID	Site Name	Feature Type
04-1-0038	MS11 Mebbin Springs; BMP-05-0049	Artefact
04-1-0048	Koonyum Range 3;	Artefact
04-1-0049	Koonyum Range 2;	Artefact
04-1-0050	Koonyum Range 1;	Artefact
04-2-0094	Borton Road 1;	Artefact
04-2-0107	West Pottsville 1	Artefact
04-4-0001	Mount Burrell Byorgin Blue Knob	Aboriginal Ceremony and Dreaming
04-4-0007	Tuncester;	Ceremonial Ring (Stone or Earth)
04-4-0009	Larnock;	Burial
04-4-0010	Bob Durrabbin's Jurraveel; Tuncester;	Aboriginal Ceremony and Dreaming
04-4-0011	Bishop's Creek Cave	Art (Pigment or Engraved)
04-4-0016	Nimbin Rocks	Aboriginal Ceremony and Dreaming
04-4-0017	Nimbin Rocks Burial Mounds	Burial
04-4-0018	Doon Doon;	Stone Quarry, Artefact
04-4-0022	Blue Knob Mountain	Aboriginal Ceremony and Dreaming
04-4-0027	Terania Creek, Whian Whian Cave	Artefact
04-4-0028	Larnock;	Burial, Artefact
04-4-0030	Terania Creek 1	Artefact
04-4-0031	Terania Creek 2	Artefact
04-4-0033	Terania Creek 3	Artefact
04-4-0034	Terania Creek 4	Artefact
04-4-0035	Tunable Falls Walkway	Stone Arrangement
04-4-0037	Nimbin Brookside	Ceremonial Ring (Stone or Earth)
04-4-0045	Nimbin Open Campsite	Artefact
04-4-0046	Booyong 1;	Artefact
04-4-0048	Duffys Break; Scarred Tree;	Modified Tree (Carved or Scarred)
04-4-0078	MacKellar Range 18-1;	Artefact
04-4-0079	Oaky Ck 4-1;	Artefact
04-4-0080	MacKellar Range 17-1;	Artefact
04-4-0082	Lismore 1;	Artefact
04-4-0083	Old Mill Road Axe;	Artefact

Site ID	Site Name	Feature Type
04-4-0084	Manewells Road Isolated Find; MR-IF;	Artefact
04-4-0085	Boorie Creek Canoe Tree; BC-CT;	Modified Tree (Carved or Scarred)
04-4-0086	Borton Road 2;BR 2;	Artefact
04-4-0087	Jiggi 1	Artefact
04-4-0088	Borton Road 1;Modanville;	Artefact
04-4-0089	Borton Road 2;?;	Artefact
04-4-0090	Boorie Ck. Canoe tree;?;	Modified Tree (Carved or Scarred)
04-4-0097	Lismore Flood Levee 1	Shell
04-4-0098	Lismore Flood Levee 2	Shell
04-4-0099	Lismore Flood Levee 3	Artefact
04-4-0103	Hospital hill Camp/Rotary Park Camp	Aboriginal Ceremony and Dreaming, Habitation Structure, Potential Archaeological Deposit (PAD)
04-4-0106	Wollongbar	Artefact
04-4-0109	Showground Camp	Aboriginal Ceremony and Dreaming Habitation Structure, Potential Archaeological Deposit (PAD)
04-4-0110	Dunoon Road Reserve	Habitation Structure, Potential Archaeological Deposit (PAD)
04-4-0111	Boorie Street	Habitation Structure, Potential Archaeological Deposit (PAD)
04-4-0112	North Lismore Fringe Camp	Habitation Structure
04-4-0113	Gundurimba	Habitation Structure
04-4-0114	Cubawee	Habitation Structure, Potential Archaeological Deposit (PAD)
04-4-0115	Jerusalem Mountain 1 BMP-05-0099	Habitation Structure
04-4-0116	The Window BMP-05-0100	Aboriginal Resource and Gathering
04-4-0117	Mt Matheson (upper) BMP-05-0101	Habitation Structure
04-4-0118	Mt Matheson (lower) BMP-05-0102	Habitation Structure
04-4-0119	Dirangah Rocks BMP-05-0103	Habitation Structure
04-4-0127	Cubawee Aboriginal Place	Habitation Structure

Table 4: AHIMS Search Results

The sites located tended to be located either close to water sources or along high ground/ridge lines, although some sites did not conform to this model entirely. Section 4.2 discusses this in more detail.



Figure 21: AHIMS sites.

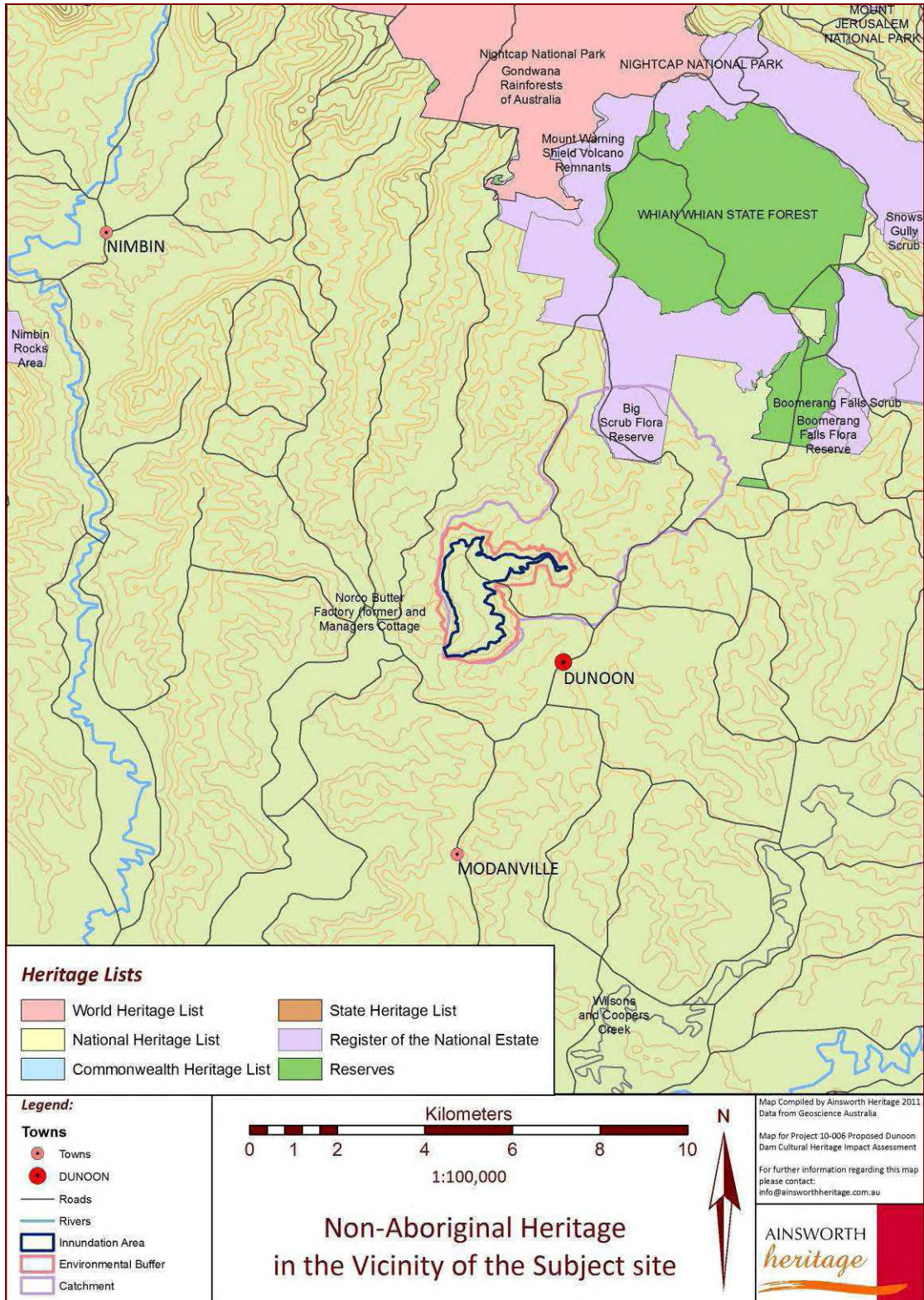


Figure 2: Currently Registered Non-Aboriginal Heritage near the Proposed Dam.

4.2 Predictive Model

A basic predictive model for Aboriginal Heritage was created to assist in determining the likelihood of Aboriginal Sites being present within the inundation and environmental buffer areas. This model was designed using several basic categories and weightings to provide a simple and easily modified model for use in the project. OEH’s *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* was used to develop the basis for this model.

The Code of Practice states the following regarding the likely environment for most Aboriginal sites in NSW to occur:

- *Within 200m of waters; or*
- *Located within a sand dune system; or*
- *Located on a ridge top, ridge line, or headland; or*
- *Located within 200m below or above a cliff face; or*
- *Within 20m of or in a cave, rock shelter, or a cave mouth*¹⁴³.

The information provided by S 14T(1)(d), S 14T(3)(a), S 14T(5), the AHIMS search and former reporting allows a general theory on site distribution to be made based on the landforms in which sites are located, which assists in informing the model below. Most sites within the local region existed in an area that was once dominated by dense forest, which was crossed by numerous water courses, both large and small. In such an environment, the drier, more open ridgeline provided the means for access and travel, with recorded sites conforming to this theory, especially when close to water.

The following information guided the predication of site types during the field survey.

Scarred Trees

Modified trees were expected to be located S14T(5)(b),(e)
[REDACTED] Should land clearance not have completely removed older growth trees, these items were expected to be encountered during the survey.

Open Campsites

These sites represent places of aboriginal occupation. *“These sites are mostly surface scatters of stone, sometimes near fireplaces. Recent studies have shown them to have significant scientific and cultural value.”*¹⁴⁴ Open campsites can also indicate where further sub-surface archaeological materials may be encountered.

S14T(5)(b),(e)
[REDACTED]
[REDACTED]
[REDACTED]

Grinding Grooves

Grinding grooves were expected to be encountered where suitable stone (i.e. basalt/sandstone – see Section 8.4 for further information) was located S14T(5)(b),(e)
[REDACTED].

¹⁴³ *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. DECCW. p.14.

¹⁴⁴ *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. DECCW.

Quarries

Quarries were expected to exist where stone of S 14T(5)(b),(e)

Burials

The ethnographic knowledge provided by the registered stakeholders indicated that there was a potential for burials S 14T(1)(d), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e). These sites will be among the most significant that can be found in the local area.

Ceremonial/Mythological Sites

There was no cultural knowledge of these sites being present in the study area and so these were not expected to be encountered.

The following values were first assigned to the landscape elements:

Landscape Unit	Value
Not stated/Urban	-2
Hillcrest or ridge	1
Side slope	0.5
Foot slope	1
Cliff	1
20m cliff buffer	1
Structural bench (5)	1
Colluvial Drainage depression	1
Flood plain	0
Drainage plan or depression	0
Levee – Natural	1
Alluvial Fan	0
Incised drainage channel	1
Stream Channel	1
Flood channel or chute/plain	0
Swamp	-1
Rural Dam	-2
Ox-bow	1

Table 5: Landscape Probability Values

The values assigned are based on a simple question: Is Aboriginal Heritage commonly found in these areas? If the answer was yes, a value of 1 was assigned, with 0.5 being assigned for features where Aboriginal sites were less common. For features where sites are less commonly found, the value was zero, and for features of heavy disturbance or difficult access, a negative value was given. The basis for these values was made of an assessment of over 1,000 sites, which have been investigated by Ainsworth Heritage over time and where those sites lie with relation to the landscape. Additionally, landscape modelling by DECCW,

provided as part of their AHIMS Searching facility, was used as an additional guide.¹⁴⁵ These questions were again posed for each of the other variable below, with a yes resulting in a positive modifier and qualified or negative answers gaining a negative modifier.

Next, values were assigned based on S14T(5)(b),(e) Due to the well watered nature of the terrain, distances from water as a factor in sight location were reduced to a 100m maximum, to provide greater resolution in the model. These values were added to those for the landscape values above. Should the 200m value have been used, adding water as a variable would have produced little additional resolution to the model.

Proximity to Water	Value
Within 100m of a Major Water Body	1
Within 50m of a Major Water Body	0.5
Within 50m of a Minor Water Body	0.5

Table 6: Water Probability Values

The next factor applied was that of slope. Slope was a generally a negative factor, due to the unsuitability of steep terrain for most human activities during Aboriginal occupation.

Slope	Value
Slope of 0-6 degrees	0
Slope of 7-15 degrees	-1
Slope of 15+ degrees	-2

Table 7: Slope Probability Values

Finally, man made and natural disturbance was applied, focusing on landslips and on roads and residential areas. The effect of land clearance and farming was generally even across much of the site, so this was not given a value.

Disturbance	Value
Landslip debris	-1
Rural Dam	-2
Constructed Waterway	-1
Disturbed Terrain	-2
Not stated/Urban/Roads	-2

Table 8: Disturbance Probability Values

¹⁴⁵ This data can be accessed by joining DECCW's Web Services, through <http://www.environment.nsw.gov.au/awssapp/login.aspx>

As such, to develop the predictive model, all features were assigned a value and where these values overlapped, the values were added together or subtracted. These values produced several areas of high potential for archaeology as demonstrated in Figure 21.

Non-Aboriginal Heritage

Non-Aboriginal heritage that may be encountered during the field survey will most likely be associated with early rural development of the area, such as dips, fence lines, homesteads, outbuildings or other built structures. Archaeological deposits would have the potential to be found in proximity to these built structures or their remnants and would include such things as bottle dumps.

S14T(1)(d),(f),(g);(5)(b),(e)

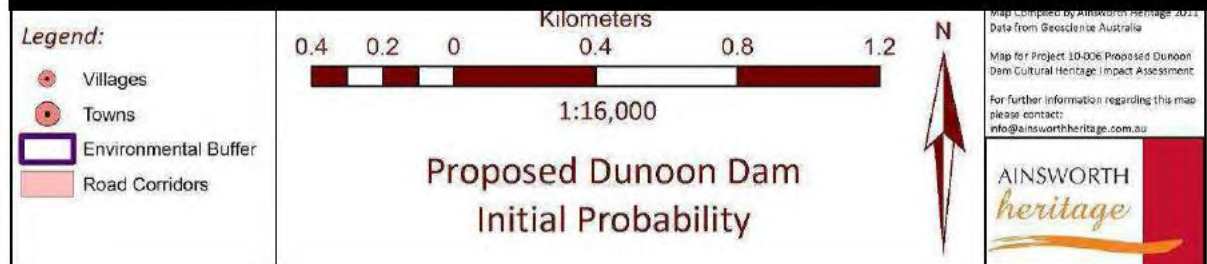


Figure 23: Initial Probability Model.

Figure 21 shows clearly that the S14T(5)(b)
S 14T(5)(b),(e)

4.3 Sampling and Survey Methodology

Access to all the properties within the dam inundation and environmental buffer areas was negotiated by Rous Water prior to fieldwork, ensuring that the field teams would have unfettered access to areas that were to be surveyed. Initial plans were for two teams (each of 2-4 people) to access various areas of the site and undertake targeted and wider transect surveys as terrain and vegetation allowed, recording each site with GPS and digital cameras to OEH standards.

4.3.1 Sampling Strategy

Areas of moderate to high probability within the Dam inundation area and environmental buffer were determined by the model in Section 4.3. These areas were to be walked by a team of 3 to 6 people, depending on variables for each day of the survey. In areas of difficult terrain or low visibility, a sample of the area was taken by following the most likely access routes. Areas of low probability were randomly sampled on each day, usually when transiting from areas of high probability and where access permitted, by walking in teams of up to 6 people.

The survey team consisted of the following people:

- Jane Ainsworth – Historical Archaeologist;
- Matt Alexander – Cultural Heritage Manager;
- Dave Salt – Aboriginal Archaeologist;
- Kevin Grunsell – Field Assistant;
- S 14(1)(d), S 14(3)(a), S 14(c) – Ngulingah Site Officer and Widjabul Elder; and
- S 14(1)(d), S 14(c) – Ngulingah Sites Officer.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

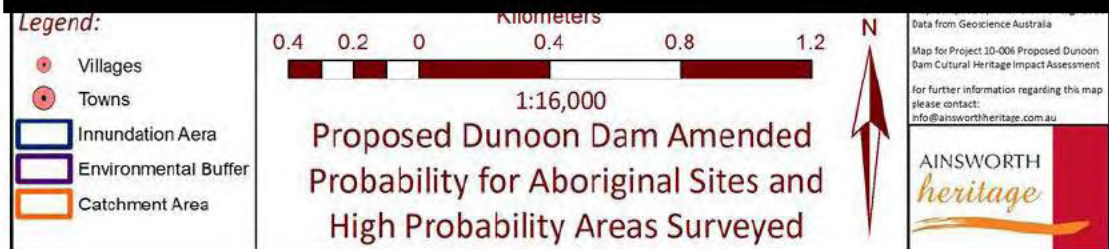


Figure 24: High Probability Areas surveyed and inaccessible

4.3.2 Survey Methodology

The survey of the proposed site was undertaken over 5 consecutive days from (and including) March 14 to March 18, 2011. Aboriginal and non-Aboriginal sites were recorded as they were encountered. Recording included GPS location (using a Garmin Hcx Vista – in GDA94) and photography of the site using a digital camera with a macro photography feature. A photographic record of the overall terrain and floral ground cover was also obtained.

The following plan was prepared:

- Day 1 planned to examine the S14T(5)(b) [REDACTED]
- Day 2 would focus on the S14T(5)(b) [REDACTED];
- Day 3 would cover the S14T(5)(b) [REDACTED];
- Day 4 was to encompass the S14T(5)(b) [REDACTED]; and
- Day 5 would focus on the area S14T(5)(b) [REDACTED].

Site numbers were assigned by day, so as to not cause the use of the same numbers: Day 1 had 101-199 and 201-299, Day 2 was 301-399; Day 3 was 401-499, Day 4 was 501-599 and 601-699 and Day 5 was 701-799.

Terrain and the density of the ground cover was a large factor in the sampling methodology. Where conditions allowed, i.e. in areas of cultivation or stock grazing, team members walked in a rank with spacing of up to 20 metres, effectively achieving a total survey of the particular area. In areas of difficult ground conditions the most likely access route was followed and spacing between team members varied, achieving a considered sample of the area. This was particularly effective S 14T(5)(b) [REDACTED]

To ensure that a sufficient sample of the site is surveyed, in order to be accurately assessed as part of any future environmental impact statement, either:

- A high level of ground surface visibility is required; or
- Where visibility is restricted, the combination of known sites, site located during the survey and probability modelling, are used to provide a the basis for management planning in areas where visibility and access is restricted.

This allows for a less than total survey coverage initially, but detailed guidelines for additional works and investigations as these areas approach development and are able to be accessed and surveyed. This allows data from an initial survey as required, even if that data is all negative, but also certainty for both the development procedure and for stakeholders as too steps required just prior to and during works. This combination of at times limited data, allied with landscape analysis and other known sites, is the most common type of assessment, as sites are rarely endowed with high surface visibility, especially within the heavily vegetated Northern Rivers region.

4.3.3 Assumed Limitations of Methodology

The methodology outlined above is likely to be constrained in several ways. For Aboriginal Heritage, it is expected that heavy vegetation will limit the ability to see the ground surface and any artefacts that may be present, due to the area wet climate and recent heavy rains. Although slope could prove a factor as well, area of steep slope were likely not settled by Aboriginal people in the past, limiting the impact of this constraint.

The constraints of the methodology for historic heritage are that the survey is based on investigating landscape features of high probability of containing Aboriginal heritage, due to the historic register searches not indicating known items of value in the project area. As such, there remaining the possibility that items of European heritage, especially on the steep sloped areas, may be missed, however, this is considered an acceptable limitation, due to the register searches and historic research not indicating items of high non-Aboriginal heritage to be present in the project area. Although the heavy vegetation may mask some European sites, this is not considered to be as limiting a factor as it is for Aboriginal heritage.

4.4 Survey Results

The survey was able to locate and record 16 Aboriginal, 12 non-Aboriginal sites and one natural site with likely connections to both Aboriginal and Europeans. It is certain that other sites would be locatable in the Dunoon Dam area, if- or when vegetation clearing, for the proposed Dam site was to occur, or during extended periods of dry weather.

The following sites were located during the field survey.

Site Name	Site Code	Class	Site Type
Displaced Groove	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Groove
Small Groove	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Groove
Hammer and Flake	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Artefact
Groove	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Groove
Sandstone Marker	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial Marker
Blade Core	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Artefact
Boulder Scar	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Artefact
Basalt Marker	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial Marker
Burial A	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial B	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial C	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial D	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial E	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial F	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial G	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial H	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial I	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial J	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial K	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial L	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial M	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Burial N AND O	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Deep Scar	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Marked Tree
Scar	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Marked Tree

Site Name	Site Code	Class	Site Type
Indeterminate Scar	S 141(5)(b), S 141(5)(e)	Aboriginal	Marked Tree
Basin 1	S 141(5)(b), S 141(5)(e)	Aboriginal	Groove
Dual Grooves	S 141(5)(b), S 141(5)(e)	Aboriginal	Groove
Basin 2	S 141(5)(b), S 141(5)(e)	Aboriginal	Groove
Lower Fraser Rd Homestead	AHPDD201	Historic	Built
Sheds	AHPDD202	Historic	Built
Causeway	AHPDD203	Historic	Built
1980s Bridge	AHPDD204	Historic	Built
Possible Camp	S141(5)(b),(e)	Historic	Built Remains
Footings	AHPDD401	Historic	Built Remains
Dairy Bales	AHPDD402	Historic	Built Remains
Channon Showgrounds	AHPDD501	Historic	Built
Abattoir	AHPDD502	Historic	Built
Old Rocky Creek Bridge	AHPDD503	Historic	Built
Munroe Rd Homestead	AHPDD504	Historic	Built
McPherson Homestead	AHPDD505	Historic	Built
Whian Whian Falls	AHPDD204	Other	Other

Table 9: Site Located

In order to maintain cultural confidentiality, the full details for each site are listed within the AHIMS site data cards in the confidential Appendix B.

4.4.1 Survey Limitations and Constraints

Two main constraints limited the total ground covered by the survey, the primary causes being dense vegetation and steep slope, which when combined prevented access to some areas. Data from the Bureau of Meteorology shows that over the past 3 months, the region has received at least 800-1200mm or rainfall (32-48 inches), which when combined with the warm summer period and long days has resulted in extensive plant growth. Gullies in regrowth areas and weed infestations (primarily lantana) have become extensive and thick, making access impossible in some areas. Furthermore, the rain has encouraged thick pasture growth, further limiting the areas open to effective survey.

This effected the ability of the survey to identify Aboriginal heritage in many areas, excepting where larger items, such as marked trees were encountered. Due to the nature of the landscape and the larger nature of the non-European heritage of the project area, this was not a major issue in identifying such heritage. The built nature of the non-Aboriginal Heritage in the project area, allowed it to stand out from the vegetation and be identified more readily than Aboriginal heritage.

The following tables list the survey effectiveness and the sites located during the survey.

Environmental Buffer Area							
Landform	Total Area m2	Area Surveyed %	Actual Area Surveyed m2	Ground Surface Visibility %	Effective Area Surveyed m2	Effective Area Surveyed as a % of Area	Aboriginal Sites Located
Hillcrest or Ridge	52,056	15%	7808.4	5%	390.42	0.75%	
S14T(5)(b)	1,866,698	10%	186669.8	5%	9333.49	0.50%	1
Foot Slope	16,685	5%	834.25	5%	41.7125	0.25%	
Structural Bench	152,916	5%	7645.8	5%	382.29	0.25%	
Landslip Debris	77,896	5%	3894.8	5%	194.74	0.25%	
Incised Drainage Channel	13,837	5%	691.85	10%	69.185	0.50%	
Stream Channel	17,043	60%	10225.8	20%	2045.16	12.00%	
Flood Channel	32,318	10%	3231.8	10%	323.18	1.00%	
Total	2,229,449	9.9%	221,003	5.8%	12,780	0.6%	
Dam Inundation Area (includes dam wall infrastructure)							
Landform	Total Area m2	Area Surveyed %	Actual Area Surveyed m2	Ground Surface Visibility %	Effective Area Surveyed m2	Effective Area Surveyed as a % of Area	Aboriginal Sites Located
S14T(5)(b)	49,977	70%	34983.9	5%	1749.195	3.50%	3
S14T(5)(b)	1,486,521	20%	297304.2	5%	14865.21	1.00%	5
Foot Slope	203,849	70%	142694.3	5%	7134.715	3.50%	
S14T(5)(b),(e)	18,977	65%	12335.05	5%	616.7525	3.25%	1
Landslip Debris	77,545	30%	23263.5	5%	1163.175	1.50%	
Flood Plain	226,054	60%	135632.4	5%	6781.62	3.00%	
Alluvial Fan	22712	50%	11356	5%	567.8	2.50%	
Incised Drainage Channel	128,799	30%	38639.7	10%	3863.97	3.00%	
S14T(5)(b),(e)	295,300	70%	206710	20%	41342	14.00%	6
Flood Channel	19,257	100%	19257	10%	1925.7	10.00%	
Total	2,528,991	36.5%	922,176	8.7%	80,010	3.2%	

Table 10: Survey section effectiveness.

Although the effective area surveyed seems relatively low (compared to the 1/3 of the inundation area actually walked), it does provide effective data on where any additional cultural heritage could remain on site. The areas investigated within each Landform provided several positive results, but when compared to the final percentage, would indicate that over 500 sites remain to be located within the survey area. However, this would be highly unlikely, with the number of sites remaining likely to be less than 25, when the remaining high potential area to be surveyed is compared with the number of sites located in high potential landforms. These sites would be located close to S14T(5)(b),(e)

S14T(5)(b),(e)

With this information, it can be determined where additional materials would remain within the survey area and allow for effective and detailed management planning within the final chapter of the assessment. The combination of the refined predictive model, based on the initial investigations, with the results above, gives clear picture as to areas where additional future investigations will be required, either prior to or following an approval to develop the proposed dam (See Chapter 8 for details).

This level of information, combined with predictive modelling, is a common way to determine the archaeological potential of a site, as it is a very rare site in the Northern Rivers in which visibility and site access allow for greater than 25% effective area coverage. The combination of a well built model (section 4.7) and good management for future works (sections 8.2 and 8.3) and the survey itself, all combine to provide the consent authority with enough information to determine the proposed dam's viability and the future management needs of the site with regards to cultural heritage.



Figure 25: East Environmental Buffer. Planned revegetation undertaken by Rous Water.



Figure 26: Macadamia Plantation just outside of the Western Environmental Buffer area.



Figure 27: Southern area of Rocky Creek, above proposed dam wall.



Figure 28: West Inundation area. Native Regrowth.



Figure 29: Central eastern Inundation area looking south.



Figure 30: Central eastern inundation area looking west.



Figure 31: East inundation area, above Fraser's Road.



Figure 32: Plantation, Western inundation area.



Figure 33: Proposed dam wall area looking south.

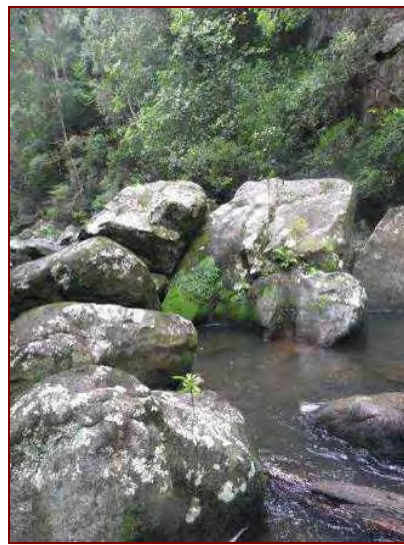


Figure 34: Proposed dam wall area looking north.

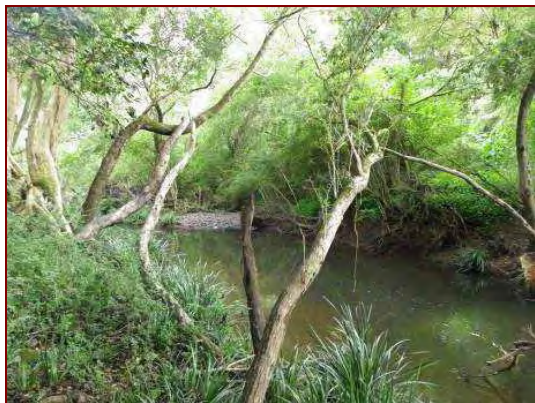


Figure 35: Central area of Rocky Creek.



Figure 36: Northern area of Rocky Creek.

Area	Vegetation	Percentage
East Environmental Buffer – Primarily Camphor forest, with pasture and plantations on more level ground and native regrowth in less accessible areas.	Camphor Laurel Forest	60%
	Pasture	20%
	Plantations	5%
	Sub-Tropical Rainforest	10%
	Open Tallowood Forest	5%
West Environmental Buffer – Camphor forest, with pasture and plantations on more level ground and some broad areas of native regrowth	Camphor Laurel Forest	40%
	Pasture	10%
	Plantations	5%
	Sub-Tropical Rainforest	10%
	Open Tallowood Forest	5%
	Moist Open Forest	30%
East Proposed Inundation Area – Primarily pasture lands with scatterings of regrowth native and exotic species.	Camphor Laurel Forest	10%
	Pasture	60%
	Plantations	10%
	Sub-Tropical Rainforest	15%
	Moist Open Forest	5%
West Proposed Inundation Area – Primarily pasture of camphor forest with some plantations and native regrowth.	Camphor Laurel Forest	35%
	Pasture	35%
	Plantations	10%
	Sub-Tropical Rainforest	15%
	Moist Open Forest	5%

Table 11: Vegetation types of the Study Area

Area	Land Use	Percentage
East Environmental Buffer – Primarily forest with limited plantations and grazing.	Plantation	10%
	Pastures	10%
	Cropping	0%
	Forrest	80%
West Environmental Buffer – Primarily forest with limited plantations and grazing.	Plantation	1%
	Pastures	5%
	Cropping	0%
	Forrest	94%
East Proposed Inundation Area – Primarily pastures and forest with limited plantations and cropping.	Plantation	10%
	Pastures	45%
	Cropping	5%
	Forrest	40%
West Proposed Inundation Area – Primarily forest with some plantations and limited grazing.	Plantation	10%
	Pastures	30%
	Cropping	0%
	Forrest	60%

Table 12: Land Uses of the Study Area

The primary land use within the site is grazing and plantations (pecans, blue gums and poplars) with the remainder of the site encompassed by regrowth vegetation, primarily camphor forests on the eastern side of the creek where land use and clearing were historically heavier and more native forest on the less heavily used western side of the creek.

4.4.2 Potential Non-Aboriginal Heritage

The potential non-Aboriginal heritage which was recorded in and near the site was primarily built heritage or the remains thereof. This consisted of several homesteads, one of which is the likely early residence of the of the McPherson family and is largely intact. Additional sites associated with rural use of the land were located including an abandoned dairy bales and rural sheds as well as several rural tips, common to many properties and littered with farming and home refuse.

The plantation of poplar trees (to the east of Fraser Road) and Fraser Road Causeway were both located after their presence was indicated during the historical research. The plantation is filled with mature trees and the causeway remains in a very good condition. The causeway is 80 years old and additional road building and creek crossing construction was also evident to the north of the causeway.

No evidence of the period of Banana growing was located; however, any remaining material from this period may be located in the extremely steep environmental buffer, which was largely inaccessible. A small wooden bridge was also found, but later information from a landowner indicated that this bridge was built in the 1980s. For further information on each, please see Appendix B.

Site Name	Site Code	Class	Site Type
Lower Fraser Rd Homestead	AHPDD201	Historic	Built
Sheds	AHPDD202	Historic	Built
Causeway	AHPDD203	Historic	Built
1980s Bridge	AHPDD204	Historic	Built
Possible Camp	AHPDD301	Historic	Built Remains
Footings	AHPDD401	Historic	Built Remains
Dairy Bales	AHPDD402	Historic	Built Remains
The Channon Showgrounds	AHPDD501	Historic	Built
Abattoir	AHPDD502	Historic	Built
Old Rocky Creek Bridge	AHPDD503	Historic	Built
Munroe Rd Homestead	AHPDD504	Historic	Built
McPherson Homestead	AHPDD505	Historic	Built
Whian Whian Falls	AHPDD204	Other	Other

Table 13: Non-Aboriginal Heritage



Figure 37: Fraser Road Homestead.



Figure 38: 1980s Timber Bridge.



Figure 39: Depression Era Causeway.



Figure 40: Possible Camp/dump.



Figure 41: Concrete Footings.



Figure 42: Central eastern inundation area looking west.



Figure 43: McPherson Homestead.



Figure 44: Workers Cottage, near McPherson homestead.



Figure 45: Old Rocky Creek Bridge, The Channon.



Figure 46: The Channon Showgrounds.



Figure 47: Abattoir, The Channon.

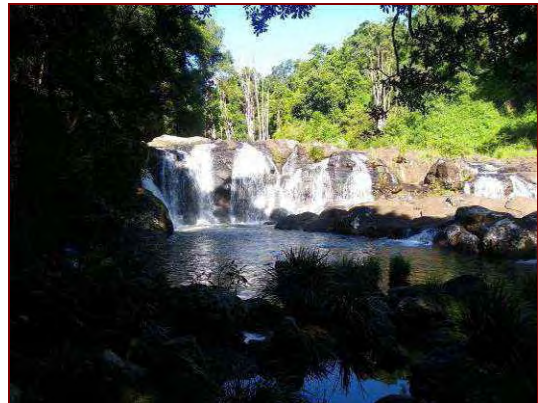


Figure 48: Whian Whian Falls.

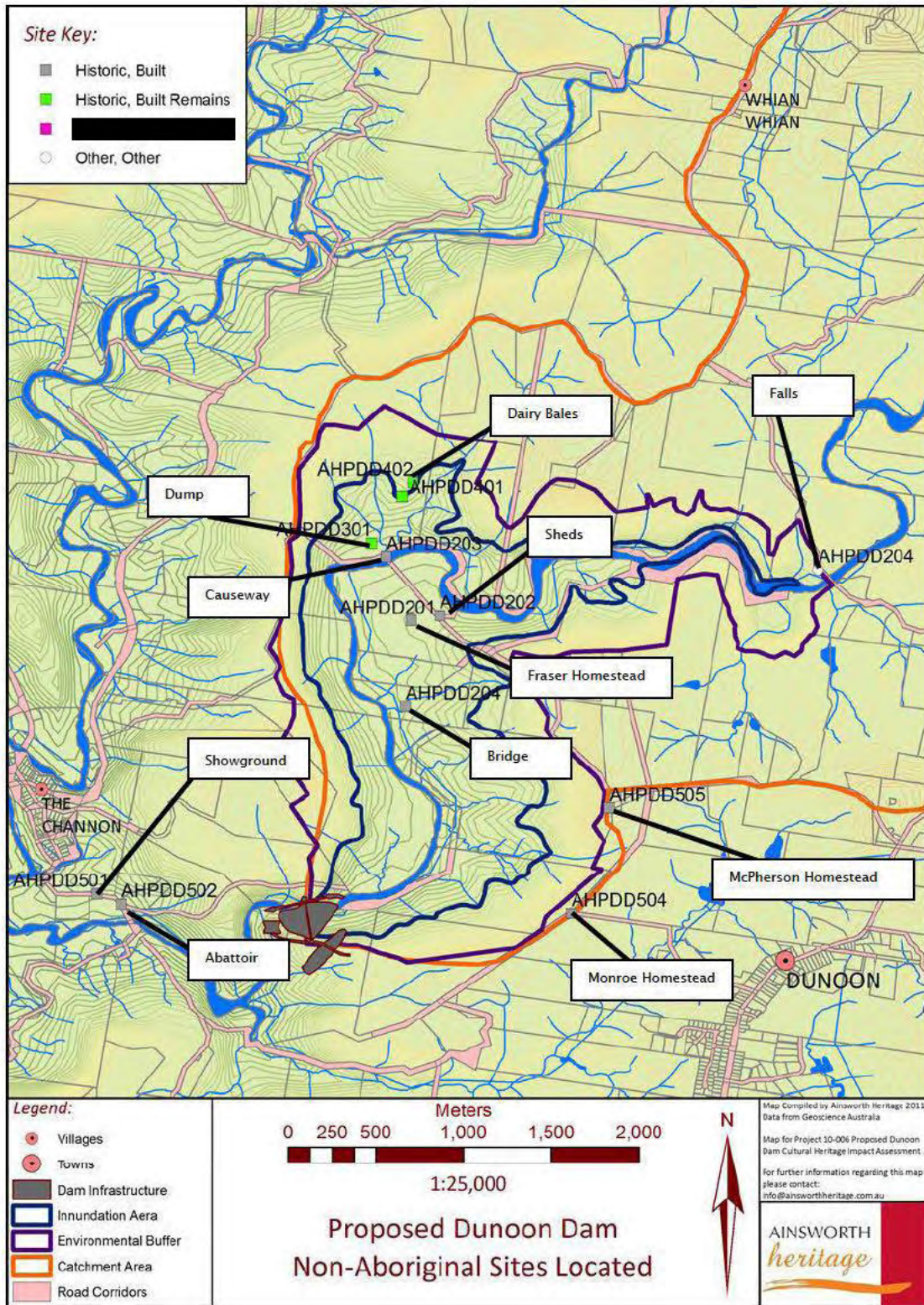


Figure 49: Non-Aboriginal Heritage in Proposed Dam Area.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

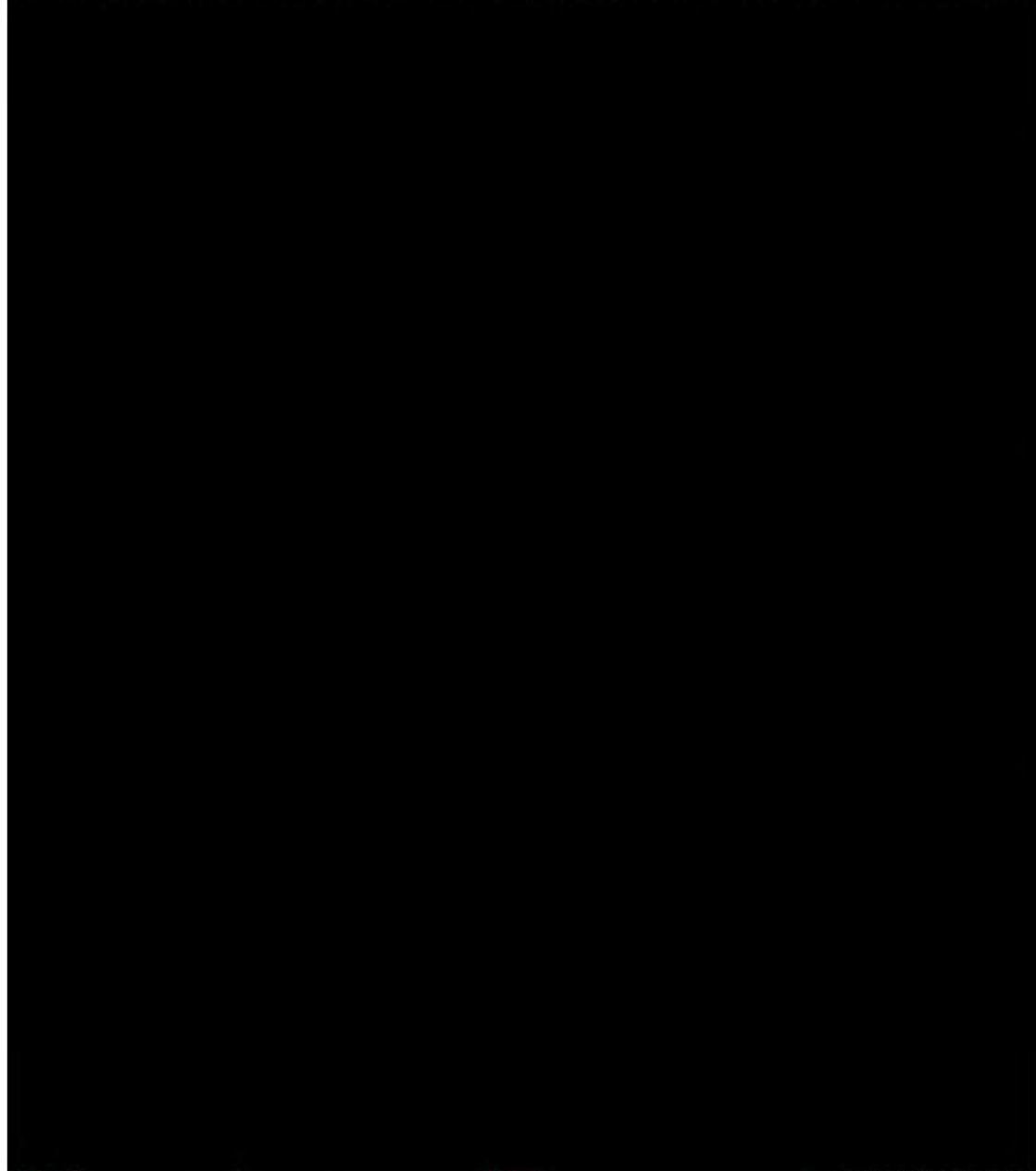


Figure 50: Aboriginal Heritage in Proposed Dam Area.

4.4.3 Aboriginal Heritage

Several items of Aboriginal Heritage were located during the field survey, which included a burial ground, burial markers, several grinding grooves, scar trees and two artefacts. The distribution of sites located was generally within S14T(5)(b),(e)

In order to determine the context of a site for this report, any object or place, within twenty-five meters of another object or place, was considered to be within the same site. As such, the two artefacts located S 14T(5)(b), S 14T(5)(e) are considered one site, as are the 25 burials listed below. Note that in the photos that follow the burials have not been shown, however, photos of each are in the Confidential Appendix B.

Site Name	Site Code	Class	Site Type
Displaced Groove	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Groove
Small Groove	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Groove
Hammer and Flake	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Artefact
Groove	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Groove
Sandstone Marker	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial Marker
Blade Core	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Artefact
Boulder Scar	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Artefact
Basalt Marker	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial Marker
Burials (25 separate burials)	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Burial
Deep Scar	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Marked Tree
Scar	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Marked Tree
Indeterminate Scar	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Marked Tree
Basin 1	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Groove
Dual Grooves	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Groove
Basin 2	S 14T(5)(b), S 14T(5)(e)	Aboriginal	Groove
Whian Whian Falls		Other	Other

Table 14: Aboriginal Heritage

Of the sites located, S14T(5)(b),(e) and they were spread across four landscape types. The grinding grooves were located S 14T(5)(b), S 14T(5)(e), as were the markers, with the artefact located on S 14T(5)(b), S 14T(5)(e). The marked trees were located S 14T(5)(b), S 14T(5)(e)

Sites mapped were either recorded by the archaeologists on site or mapped at the request of the attending local Aboriginal representatives. Some sites, notably the marked tree, will likely require additional investigation to ensure their provenience is correct, however, due to the follow up investigation of the burials (see below) confirming the likelihood of their being Aboriginal in origin, the burials will likely become the focus of future management and planning for the dam due to their likely significance.



Figure 51: § 141(5)(b), § 141(5)(e) – Grinding Groove.



Figure 52: § 141(5)(b), § 141(5)(e) – Grinding Groove.



Figure 53: § 141(5)(b), § 141(5)(e) – Flake.

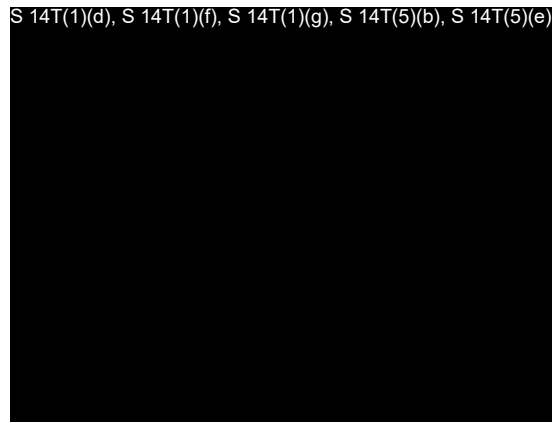


Figure 54: § 141(5)(b), § 141(5)(e) – Grinding Stone.



Figure 55: § 141(5)(b), § 141(5)(e) – Grinding Groove.

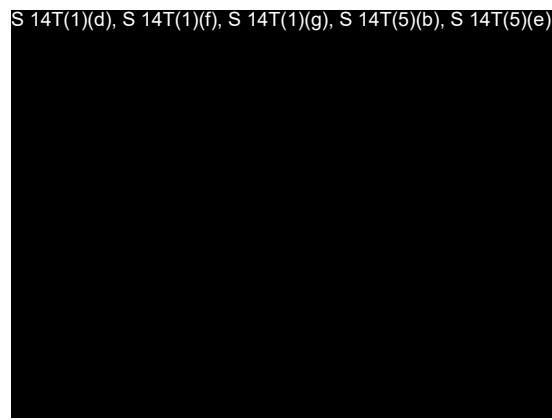


Figure 56: § 141(5)(b), § 141(5)(e) – Burial Marker.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

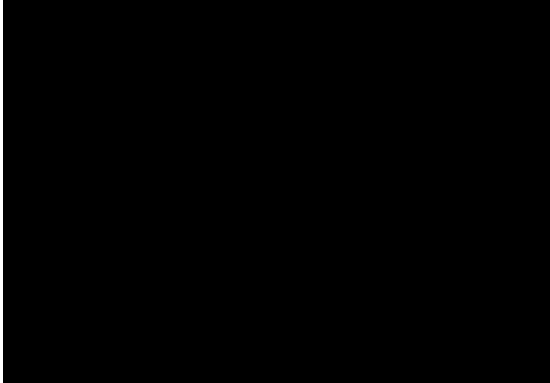


Figure 57: § 14T(5)(b), § 14T(5)(e) – Flake Scar.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

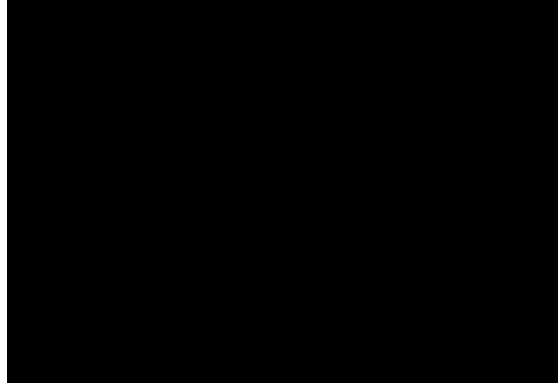


Figure 58: § 14T(5)(b), § 14T(5)(e) – Scar Tree.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

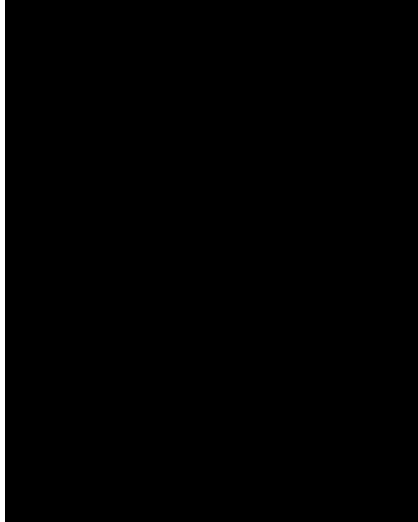


Figure 59: § 14T(5)(b), § 14T(5)(e) – Scar Tree.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

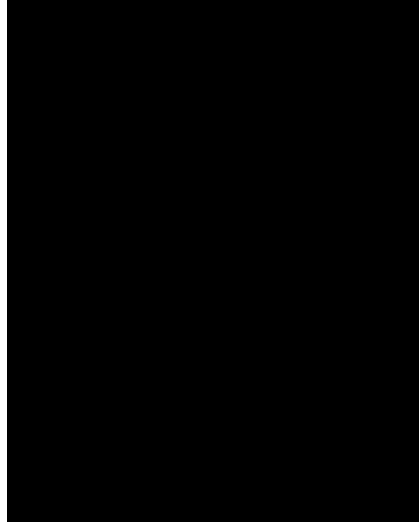


Figure 60: § 14T(5)(b), § 14T(5)(e) – Scar Tree.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

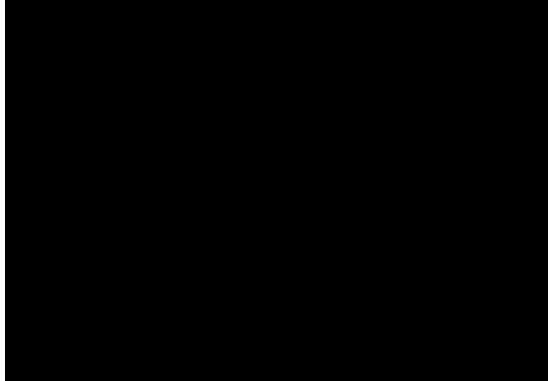


Figure 61: § 14T(5)(b), § 14T(5)(e) – Grinding Groove.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

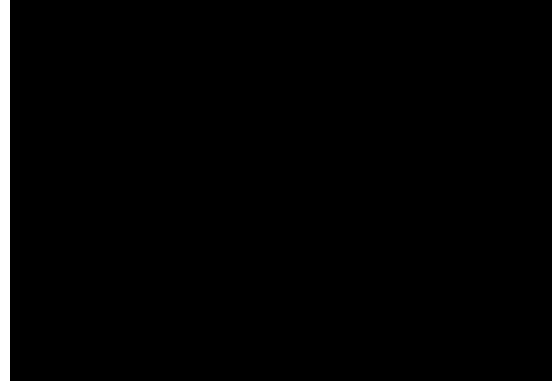


Figure 62: § 14T(5)(b), § 14T(5)(e) – Grinding Groove.



Figure 63: S 14T(5)(b), S 14T(5)(e) – Grinding Groove.

4.5 Analysis of Survey Data

The survey was able to reveal several trends about Aboriginal land use in the Dunoon Dam area, whilst confirming the non-Aboriginal patterns apparent in the documentary research. These trends are common to the wider region, and similarly, in other parts of the Australian landscape with a certain amount of predictability. These Aboriginal land use patterns can be seen, for the purposes of this report, in a purely practical framework, although custom and ritual are also likely to have played a part.

Grinding sites are found S 14T(5)(b), S 14T(5)(e), S14T(5)(b),(e) S14T(5)(b),(e) These grinding patches may have represented tool manufacture or food processing, S14T(5)(b),(e) S14T(5)(b),(e).

Stone Artefacts were located on S14T(5)(b),(e) S14T(5)(b),(e) Likewise, these sorts of areas remain prime habitation areas in historic times. This can be seen at the S 14T(5)(b), S 14T(5)(e) This site presents a potential interesting investigative area for future archaeological work, should the dam proceed, allowing the various occupation stages to be studied.

Scarred trees in the Dunoon area have been located S14T(5)(b),(e) as was expected prior to the field survey. S14T(5)(b),(e)

S 14T(5)(b), S 14T(5)(e), S14T(5)(b),(e) S14T(5)(b),(e) Several grooves were located at S 14T(5)(b), S 14T(5)(e), S14T(5)(b),(e)

S14T(5)(b),(e)

The Burial site S 14T(5)(b), S 14T(5)(e), of 25 separate stone mounds located during the survey, was in relatively inaccessible terrain and its location, S 14T(5)(b), S 14T(5)(e), were factors carefully chosen by the contemporary inhabitants of the Dunoon basin. The location of this burial ground can be seen as S 14T(5)(b), S 14T(5)(e) when compared to the unforgiving nature of the surrounding S14T(5)(b),(e) where likely access routes are minimised. S14T(5)(b),(e) S14T(5)(b),(e)

The ridgelines, which interconnect the low lying parts of the site, all feed back into the larger ridge complexes which stretch south to Lismore and north into the Mt. Warning Caldera. The protected nature of the dam site, its accessibility from the surrounding ridges, water, habitats and differing stone types all point towards this area having been one of great use to the local Aboriginal peoples, which is confirmed by the sites located within the valley.

With regards to non-Aboriginal heritage, the survey confirmed the use of the valley as an agricultural area through the location of the rural infrastructure and homesteads. The location of the causeway would either support this or the history of the timber getting in the region, which occurred on the western side of Rocky Creek at a later date and of which there is no other remaining physical evidence, apart from the highly altered vegetation patterns. However, no material evidence was found from the banana growing period, likely due to either its location in the steep and inaccessible slopes or due to its removal.

S14T(1)(d),(f),(g);(5)(b),(e)

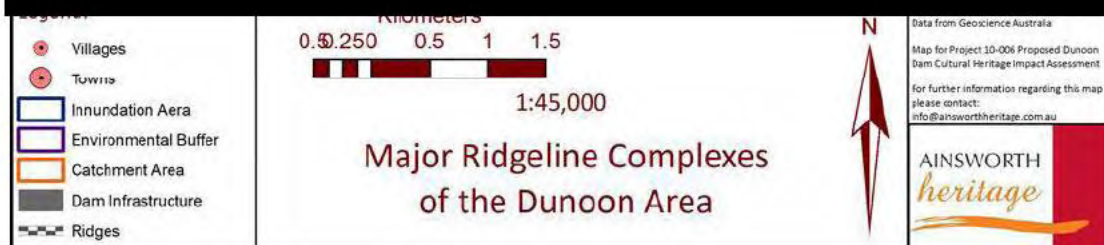


Figure 64: Major Ridgelines in the Dunoon Area.

4.6 Refined Predictive Model

With the data collected during the survey, the data from the survey as well as the additional information provided by ^{S 14T(1)(d), S 14T(3)(a), S 14T(3)}, the predictive model was seen to require only slight amending. This was due to the majority of sites ^{S 14T(5)(b), S 14T(5)(e)}
^{S 14T(5)(b), S 14T(5)(e)}
^{S 14T(5)(b), S 14T(5)(e)}

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

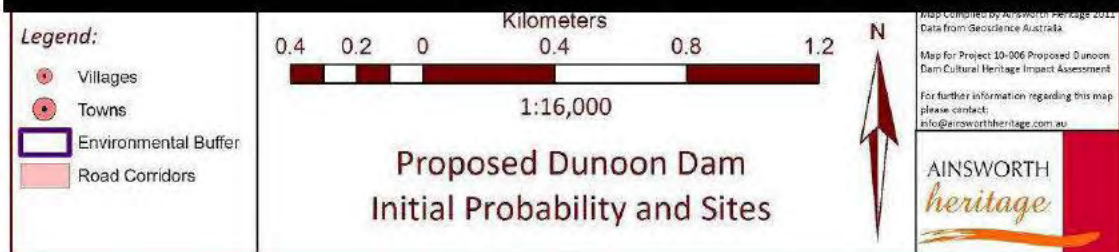


Figure 65: Initial probability and sites.

Therefore, the probability map was amended as follows, with the conclusion coming from the location of the Aboriginal artefacts identified, with all those located S 14T(5)(b), S 14T(5)(e) [redacted]. For this a new map was generated, showing areas of future potential archaeology that expanded the areas of moderate to high potential

by 25 meters, encompassing all known sites, and buffering known sites by 25 meters to account for additional associated materials:

Factor	Added Value
Areas within 25 meters of moderate to high potential	1
Areas within 25 meters of known sites	1

Table 15: Amended probability values

This amended probability shows that large areas of the Environmental Buffer, due to slope, will not likely reveal Aboriginal Archaeology in future. S14T(5)(b),(e)

S14T(5)(b),(e)

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

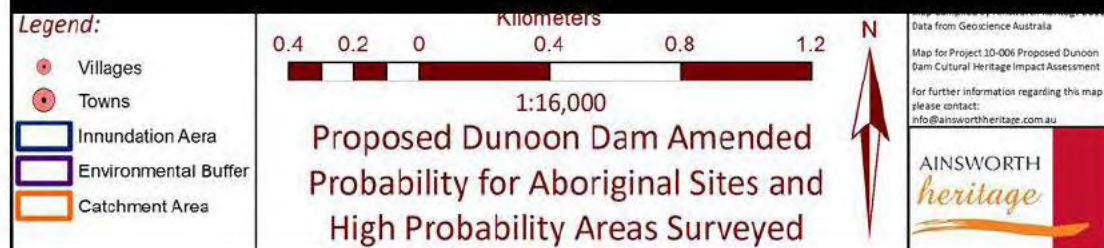


Figure 66: Amended probability map for the Dunoon Dam.

4.7 Regional Character

With the information gleaned from the historic overview, oral testimony from [S 14T(1)(d), S 14T(3)(a), S 14T(3)(b)] as to other non-registered and important sites nearby, database searches and the site survey a general overview of the regional character of the proposed Dunoon Dam site can be provided for both Aboriginal and non-Aboriginal heritage.

The character of the Aboriginal sites located in the valley is one of a self-contained ecological unit, with a single primary access route [S 14T(5)(b), S 14T(5)(e)] which would have served an Aboriginal family group as a seasonal place of habitation. The location of several site types [S14T(5)(b),(e)] indicate that the valley was likely used over an extended period of time and that it served a variety of uses [S14T(5)(b),(e)]. This site typology is reflected in the broader Bundjalung landscape, as indicated by the AHIMS search, which returned results which included burials, artefact scatters and marked trees, as well as ceremonial sites. This similarity of site types shows that the proposed dam site fits within the broader Bundjalung Cultural Landscape and is an integral part of it.

The character of the non-Aboriginal sites is indicative of the rural landscape of the northern rivers and its progressive development and exploitation in the use of several different rural industries. The highly modified landscape, with elements remaining from several periods of its utilisation, is a common one across the Northern Rivers. Although elements within the valley are better understood as part of the valley, the sites located within the valley are of a similar type to those found throughout the region.

4.8 Burials

This section is a short description of the burials, to provide additional information to the reader on their typology and provenance. However, due to the culturally sensitive nature of the site, the full report on the second survey of the burials is contained in the confidential Appendix C.

The initial location of the site by the first survey was followed up by a second visit by Ainsworth Heritage and Dr. Douglas Hobbs on the 22nd of August 2012. The second survey, less constrained by vegetation and the need to survey the entire proposed dam site, was able to record and re-record a total of 25 burial mounds. The Hobbs report stated the following:

“Aboriginal burials have a particular significance for Aboriginal people today and provide important physical and spiritual connections with the land, culture and their past. Due to the high cultural significance of the site a further survey was commissioned by Rous Water in August 2012 to document the site in detail and to assess it archaeologically and ethnographically. This report presents the results of this survey and scientific assessment to determine if the features classified as aboriginal burials are likely to be burials and if so what options are available to Rous Water to mitigate these features in future planning.

The scientific significance assessment comprised a detailed survey of the site to investigate its extent and to record the number and dimensions of the stone mounds discovered during the initial cultural heritage impact survey conducted by Ainsworth Heritage in November 2011.

The site, situated [S 14T(5)(b), S 14T(5)(e)] of the proposed dam site, was found to contain 25 stone mounds of various sizes, shapes and orientations. Metric analysis of the dimensions of the mounds and their location were compared to see if they

bore any similarities to early ethnographic records of Aboriginal Burial Grounds in this part of Australia.

The results of this analysis and interpretation of the physical evidence when taken collectively indicate that there is an extremely high probability that the site is indeed an Aboriginal Burial Ground and support the previous conclusions of the initial cultural heritage survey. There is essentially no other plausible explanation that could account for the formation of the site. Further recommendations are suggested for possible investigation, mitigation and management of the site.”

Hobbs description of the burials provided the following information:

“In total 25 stone mounds were located these were numbered from A-X with the exception of K which proved to be a natural formation. The stone mounds occurred in two distinct shapes, S14T(5)(b),(e)

[REDACTED]

[REDACTED] This could be evidence to suggest that these stone mounds could relate to a use in a different period of cultural practice compared to the more intact S14T(5)(b),(e) [REDACTED] of the site appeared even older than the other two groups and could predate all the other mounds.”

This information indicates a long term use of the site by the local aboriginal people. Additionally, the various sizes of the burials indicated that people of various ages had also been buried there, indicating the burial ground was one of general use. This variation in burial typology would allow future research to learn much of the burial practices of the local people.

Detailed information is available from Hobbs report, found in Appendix C.

5.0 ASSESSMENT OF SIGNIFICANCE

The significance of the sites located during the survey is derived from their place within the larger Dunoon and Bundjalung Cultural Landscape and their ability to assist in providing a comprehensive picture of Aboriginal and non-Aboriginal land use, occupation, movement and exploitation of natural resources in the area.

The assessment of significance is based upon the standard types of significance as outlined by the *ICOMOS Burra Charter*.¹⁴⁶

The significance assessments provided in this chapter examine items of both known and potential significance and are initial assessments and are not comprehensive assessments of each item, instead, the assessments seek to provide a general overview of each item's potential significance, to inform more detailed future assessments.

5.1 Types of Significance

The following descriptions of significance are derived from the NSW Heritage Branches' *Assessing Heritage Significance*.¹⁴⁷ The NSW criteria are based closely upon those of the *ICOMOS Burra Charter*.¹⁴⁸

Each criterion of significance, see below, is usually categorised by its level, be that local, state, national and international. An additional level, regional is sometimes used to denote sites that are important to several local areas but not the entire state. Although some practitioners assign low, moderate and high levels of significance, the NSW Heritage Branch criteria now fall within the local to international scale.

The following summaries of the criteria come from the NSW Heritage Branch and how they relate to the Dam.

Criterion Name	Threshold Detail	Relationship to Dunoon Dam Cultural Heritage
Criterion A: Historic Significance	An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).	Therefore heritage items in the dam area would need to demonstrate a prominent place within the history of local area, NSW or Australia.
Criterion B: Associative Significance	An item has a strong or special association with the life or works of a person, or a group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area)	Therefore heritage items in the dam area would need to be associated with a prominent person, or persons, who have contributed in a meaningful way to the history and development of the local area, NSW or Australia.
Criterion C: Social Significance	An item has strong or special association with a particular community or cultural group in	Therefore heritage items in the dam area would need to demonstrate an importance to

¹⁴⁶ *ICOMOS Burra Charter 1999*.

¹⁴⁷ *Assessing Heritage Significance*. NSW Heritage Office, 2001.

¹⁴⁸ *ICOMOS Burra Charter 1999*.

Criterion Name	Threshold Detail	Relationship to Dunoon Dam Cultural Heritage
	NSW (or the local area) for social, cultural or spiritual reasons.	a social group of the local area, NSW or Australian makeup and distribution.
Criterion D: Aesthetic Significance	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW.	Therefore heritage items in the dam area would need to demonstrate visual qualities that set them apart from others within the local area, NSW or Australia.
Criterion E: Scientific Significance	An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area).	Therefore heritage items in the dam area would need to demonstrate research potential sufficient to provide additional knowledge to the local area, NSW or Australia
Criterion F: Rarity	An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area).	Therefore heritage items in the dam area would need to be considered rare at a local area, NSW or Australian level.
Criterion G: Representativeness	An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or environments (or the local area's cultural or natural places or environments).	Therefore heritage items in the dam area would need to be considered good examples of their type within the local area, NSW or Australia

Table 16: Significance Criteria

5.2 Significance of Aboriginal Sites

Before examining the significance of the overall Dunoon Dam landscape, each individual site's significance was determined by its own rareness and representativeness and then its ability to contribute to the larger network of local and regional sites was determined. Although all Aboriginal sites are of importance to the local Aboriginal people, this method is used to assist in determining mitigation measure during impact assessment.

The table on the following page contains the individual significance assessments for each site. Note that these are initial assessments of significance, allowing follow on EIS studies to provide greater detail or remove items from the listings as required.

Further information on each site is available in Appendix B.

Site Name	Type	Overall Individual Significance (Local, State, National)							Contributory Significance to the Collection	Notes
		A	B	C	D	E	F	G		
S 14T(5)(b), S 14T(5)(e)	Displaced Groove	L	L	L					Low	Likely displaced from original location
	Small Groove	L	L	L					Low	
	Grind stone and flake	L	L	L	L				Moderate	Has potential to be part of larger site
	Groove	L	L	L					Low	
	Sandstone Marker	L	L	L			L		Low	
	Blade Core	L	L	L					Low	Has potential to be part of larger site
	Boulder Scar	L	L	L					Low	
	Basalt Marker	L	L	L			L		Low	
	Burials	S	L	L	L	S	S	S	High	Important collection of in situ burials. Site has significance beyond the local area for its connections to ancestors and for future research should the proposed dam proceed.
	Deep Scar	L	L	L			L	L	Low	Potential to have been created by Europeans, but has been recorded as an Aboriginal feature
	Scar	L	L	L			L	L	Moderate	
Indeterminate Scar	L	L	L			L		Low		
Basin 1	L	L	L					Low		
Dual Grooves	L	L	L					Low		
Basin 2	L	L	L					Low		

Table 17: Aboriginal Site Significance

5.3 Overall Significance of the Aboriginal Collection

For the overall collection of sites within the proposed Dunoon Dam area, an assessment of significance against the seven criteria of *The Burra Charter* was made. Significance is determined by a places relationship to seven criteria for significance. The following table breaks down the significance of the proposed site of the Dunoon Dam into these seven criteria based on those used within NSW and provides a level of significance for the collection as a whole.

Criteria of Significance	Significance of the Proposed Dunoon Dam Aboriginal Sites
<p>Historic Significance An object is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area)</p>	<p>The proposed Dunoon Dam site is significant historically as part of the living landscape of the Bundjalung and Widjambul peoples. As a well watered location for camping, the site would have been utilised by generations of local Aboriginal people and therefore be of local and state significance.</p> <p>Overall Significance: Local – State for burials</p>
<p>Associative Significance An object has a strong or special association with the life or works of a person, or a group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area)</p>	<p>The proposed Dunoon Dam site is associated with ancestors of the local Widjambul peoples and the larger Bundjalung language group. Thus, the site has local significance.</p> <p>Overall Significance: Local</p>
<p>Aesthetic Significance An object is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW</p>	<p>The highly modified nature of the site, excluding the Whian Whian falls, means the site is only of local aesthetic significance.</p> <p>Overall Significance: Local</p>
<p>Social Significance An object has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons</p>	<p>The proposed Dunoon Dam site is socially significant to the Widjambul and Bundjalung peoples for its place in their ancestors' daily life, through its use for camping, food gathering and production and as a place for their ancestors' burials.</p> <p>Overall Significance: Local – State for burials</p>
<p>Scientific Significance An object has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)</p>	<p>The proposed Dunoon Dam site has the potential to be of state significance through the potential camp site on ^{S 14T(S)(D), S} [REDACTED], the burials and the interconnected nature of the site ^{S 14} [REDACTED]. These two sites warrant further investigation, should the proposed dam proceed, and their relationships to the other sites in ^{S 14T(S)(D), S 14T(S)(E)} could form the basis of future research.</p> <p>Overall Significance: Local – State for burials</p>
<p>Rarity An object possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)</p>	<p>The proposed Dunoon Dam site possesses several different types of Aboriginal sites, some of which are relatively uncommon in a regional context, such as the burials (site ^{S 14T(S)(D), S 14T(S)(E)}).</p> <p>Overall Significance: Local – State for burials</p>
<p>Representativeness An object is important in demonstrating the principal</p>	<p>The proposed Dunoon Dam site has a good regional representative grouping of site types, providing a clear indication of how the area was utilised by the local Aboriginal</p>

characteristics of a class of NSW's cultural or natural places or environments (or the local area's cultural or natural places or environments)	peoples over time. Overall Significance: Local – State for burials
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Table 18: Combined significance of Aboriginal sites

Overall, the Aboriginal Sites located, in conjunction with the potential for further material to be present provides the proposed dam site with a state significance, due to the collections significance to the Widjabul and Bundjalung peoples. This significance is manifested through the collections historic, associative, scientific and social significance as well as the collections representativeness and the rarity of some of the sites encountered.

5.4 Significance of Non-Aboriginal Sites

Before examining the overall historic significance of the Dam area, each individual site's significance was determined by its own rareness and representativeness, and then its ability to contribute to the larger network of local and regional sites was determined.

The table on the following page contains the individual significance assessments for each site. Note that these are initial assessments of significance, allowing follow on EIS studies to provide greater detail or remove items from the listings as required.

Site Name	Type	Overall Individual Significance (Local, State, National)										Notes	
		A	B	C	D	E	F	G					
AHPDD201	Lower Fraser Rd Homestead	L			L						L		Good intact example of an early local homestead
AHPDD202	Sheds												Not assessed as possessing any heritage significance
AHPDD203	Causeway	L								L			Notable for its association with the Depression era works programs
AHPDD204	1980s Bridge												Not assessed as possessing any heritage significance
STATE	Possible Camp												Possibly associated with AHPDD203, but sub-surface investigation would be required
AHPDD401	Footings												Not assessed as possessing any heritage significance
AHPDD402	Dairy Bales												Not assessed as possessing any heritage significance
AHPDD501	The Channon Showgrounds	L			L						L		Important to the local community for many years as a central part of The Channon
AHPDD502	Abattoir										L	L	Good surviving example of a rural abattoir
AHPDD503	Old Rocky Creek Bridge												Not assessed as possessing any heritage significance
AHPDD504	Munroe Rd Homestead												Not assessed as possessing any heritage significance
AHPDD505	McPherson Homestead	L	L		L						L	L	Good, intact example of an early 20 th Century rural residence with much of its original fabric still intact
AHPDD204	Whian Whian Falls	L			L						L	L	Important to the local community for its long term use as a recreational place and destination for tourists to the local area

Table 19: Non-Aboriginal Site Significance

Overall, the group of Non-Aboriginal Sites located are representative of northern rivers rural heritage. Bar two individual items (the McPherson Homestead and the depression era causeway), the items located are not particularly rare nor do they represent any historic events of note for the local area. Whilst the overall landscape is aesthetically pleasing, it does not threshold as an overall area of historic heritage significance.

6.0 IMPACT ASSESSMENT

This chapter assesses the potential impact of the proposed works upon each of the sites located during the field survey and looks at options for managing and mitigating impact upon items of cultural heritage value.

6.1 Outline of the Proposed Dam Works

The various preliminary studies undertaken to date indicate the proposed Dunoon Dam is technically feasible. However, these studies were preliminary in their nature and can not necessarily be relied upon to justify further development of the concept without specific detailed investigations.

Initial planning suggests that the Dunoon Dam shall comprise of:

- An dam on Rocky Creek, downstream of the existing Rocky Creek Dam, approximately 2.5 kilometres west of the village of Dunoon. The dam would be built across the narrowest section of the Rocky Creek valley, lying below Munroe Road. The dam would use materials from the immediate area wherever possible. The eventual exact nature of the design is still to be determined. Infrastructure will include a dam wall, spillway and pumping station along with access roads and other associated site works;
- A dam lake of approximately 50,000 megalitres (ML) with a surface area of 220 hectares. Prior to the filling of the dam, all vegetation and any man made structures would be removed from site, and limited stripping back to bedrock for the collection of suitable construction materials for the dam itself (rock etc.) from within the dam's own catchment area, only where the material is deemed suitable for dam wall construction;
- An environmental buffer zone surrounding the dam of approximately 225 hectares. This area will be used to provide a buffer between the dam and the agricultural areas around it. The buffer will likely be the location for any access roads, monitoring stations and public amenities;
- A rising main connecting the dam to existing raw water mains at Dorroughby, from which water shall be transferred to Rous Water's existing Nightcap Water Treatment Plant. The likely route of this pipeline would be along Munro Road, then Dunoon Road and finally along Rocky Creek Dam Road. The rising main is planned to run within the existing road corridor and would involve the excavation of a trench into which the pipes for the main would be placed, as well as any required pumping stations;
- Various plant and facilities associated with the operation of the dam.

This overview of the outlined works is at this time only general in its scope, as the exact details of any dam design and a detailed works program has not been undertaken and will not until the completion of the current feasibility studies. Figure 5 illustrates the proposed elements of the Dam.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

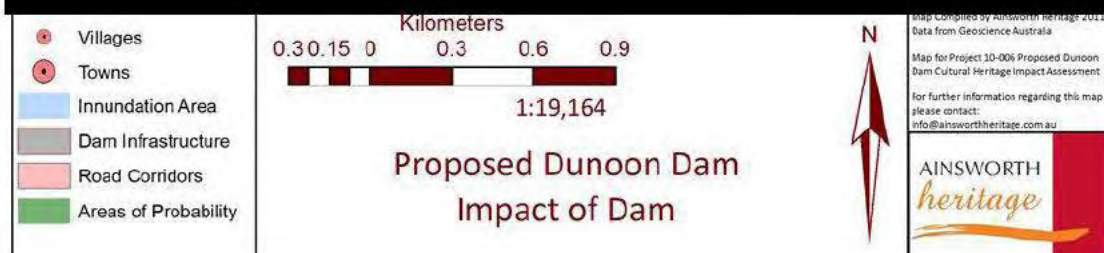


Figure 67: Planned dam infrastructure, inundation and its impact upon known and potential heritage.

6.2 Impact Upon Non-Aboriginal Heritage Significance

The impact upon known non-Aboriginal Heritage of the proposed dam, in its current form, is high. Nearly all of the existing rural infrastructure of the valley would be removed during preparation of the site. Elements such as sheds and the causeway would be broken up and removed, with items such as the Fraser Road Homestead potentially removed from site. Sites such as the McPherson homestead and older buildings which contribute to the significance of Dunoon itself may also be at risk of impact from road use and/or road strengthening, widening and other associated works.

Table 15 outlines the impact upon each site located during the field survey. Impact from works is broken down into the following categories:

- Dam Infrastructure – The Dam wall, rising main and other associated infrastructure construction;
- Inundation Area – Site impacted by the inundation area and its preparation;
- Other Works – Works such as road widening/strengthening etc. which will be required to support the construction of the dam; and
- Dam Operations – Impact from large releases of water in emergencies or from ongoing maintenance of the site.

For each of these impacts, the impact on each site is rated as:

- None – No impact from works;
- Low – Mainly indirect impact from nearby works, with most or all elements of significance will be unaffected in the long term;
- Moderate – Indirect impact and some direct impact from nearby works, with some elements of the site, which contribute to its significance, altered, damaged or removed;
- High – Direct impact upon the site from works, with most or all of the sites significant elements damaged or destroyed or the site being moved from its original location;
- Total – Site destroyed by works and all elements which contribute to significance destroyed or removed; and
- Some – Impact expected but cannot yet be categorised, with impact on significant elements of the site possible, but not yet known.

Site No.	Name	Dam Infrastructure	Inundation Area	Other Works	Dam Operations
AHPDD201	Lower Fraser Rd Homestead	None	Total	None	None
AHPDD202	Sheds	None	Total	None	None
AHPDD203	Causeway	None	Total	None	None
AHPDD204	1980s Bridge	None	Total	None	None
AHPDD301	Possible Camp	None	Total	None	None
AHPDD401	Footings	None	Moderate	None	None
AHPDD402	Dairy Bales	None	Moderate	None	None
AHPDD501	The Channon Showgrounds	None	None	None	Some
AHPDD502	Abattoir	None	None	None	Some
AHPDD503	Old Rocky Creek Bridge	None	None	None	Some
AHPDD504	Munroe Rd Homestead	None	None	Some	Some
AHPDD505	McPherson Homestead	None	None	Some	Some
AHPDD204	Whian Whian Falls	None	Low	Some	Some

Table 20: Impact on Non-Aboriginal sites

6.3 Impact Upon Known Aboriginal Heritage Significance

The impact upon known Aboriginal Heritage of the proposed dam, in its current form, is high. Nearly all of the existing sites located in and around the valley would be removed during preparation of the site or suffer from impact during the construction of S14T(5)(b),(e)

These measures are discussed in Chapter 8.

Table 16 outlines the impact upon each site located during the field survey. Impact from works is broken down into the following categories:

- Dam Infrastructure – The Dam wall, rising main and other associated infrastructure construction;
- Inundation Area – Site impacted by the inundation area and its preparation;
- Other Works – Works such as road widening/strengthening etc. which will be required to support the construction of the dam; and
- Dam Operations – Impact from large releases of water in emergencies or from ongoing maintenance of the site.

For each of these impacts, the impact on each site is rated as:

- None – No impact from works;
- Low – Mainly indirect impact from nearby works, with most or all elements of significance will be unaffected in the long term;
- Moderate – Indirect impact and some direct impact from nearby works, with some elements of the site, which contribute to its significance, altered, damaged or removed;
- High – Direct impact upon the site from works, with most or all of the sites significant elements damaged or destroyed or the site being moved from its original location;
- Total – Site destroyed by works and all elements which contribute to significance destroyed or removed; and
- Some – Impact expected but cannot yet be categorised, with impact on significant elements of the site possible, but not yet known.

Site No.	Name	S14T(5)(b), S 14T(5)(e)	S14T(5)(b),(e)	S14T(5)(b),(e)	Other Works	S14T(5)(b),(e)
	Displaced Groove	None	None	Total	None	None
	Small Groove	None	None	High	None	None
	Grind stone and flake	None	None	Total	None	None
	Groove	None	None	Total	None	None
	Sandstone Marker	None	None	Total	None	None
	Blade Core	None	None	Total	None	None
	Boulder Scar	None	None	Total	None	None
	Basalt Marker	None	None	Total	None	None
	Burials	None	None	Total	None	None
	Deep Scar	High	High	None	Moderate	None
	Scar	High	High	None	Moderate	None
	Indeterminate Scar	High	High	None	Moderate	None
	Basin 1	Total	Total	None	None	None
	Dual Grooves	None	None	None	None	High
	Basin 2	Total	Total	None	None	None

Table 21: Impact on Aboriginal sites

6.4 Impact Upon Potential Aboriginal Sites

The impact upon areas with the potential to contain additional Aboriginal Heritage is high, with the percentage of the areas identified that will be inundated estimated at 90%. The areas to be inundated also include the areas with the highest potential on the elevated ground close to the creek, especially at ridgeline terminus's and areas of the creek bed where good rock is readily available. The only areas not impacted are on the ridgelines on the edges of the Environmental Buffer and some of the more level areas on the higher slopes that have access to nearby streams and springs.

6.5 Dam Design Options

Rous Water undertook an in house assessment of lower dam levels in order to address the comments of Aboriginal stakeholders.

Correspondence from Rous Water indicated the following:

"...regarding a reduced Dunoon Dam storage size that would not inundate the identified aboriginal burials at Dunoon (J61) compared to the envisaged full storage level (J52). The full system yield (including other storages and supplies) with the reduced storage size is 15,100 ML annum which compares to the current system yield using the same assumption of 14,600 ML/a.

In other words a dam that wouldn't flood the burials would yield 500 ML/a in a 2060 regional shortfall context of 5000-6500 ML/a.

Given the cost and complexity of developing a new dam of any size, further development of the reduced storage option was considered inconsistent with Future Water Strategy values and objectives and hence an internal decision was made to not further consider the option.¹⁴⁹"

These lower dam levels would create a dramatic shortfall in available water and make the proposed dam an unviable future water option. As such, Rous Water's dam design options only relate to the type of dam wall that would be installed, should the dam proceed to development.

The two dam wall options are shown below consist of the original concept, an earth fill type dam, with a larger development foot print and the latter concept of the roller compacted concrete type dam.

The roller compacted concrete type dam has a much small development footprint and would be the preferable option from a heritage perspective, as the trees and grooves in the are would have much less potential to be impacted upon by such a wall.

¹⁴⁹ See Appendix D for the Rous Water analysis.

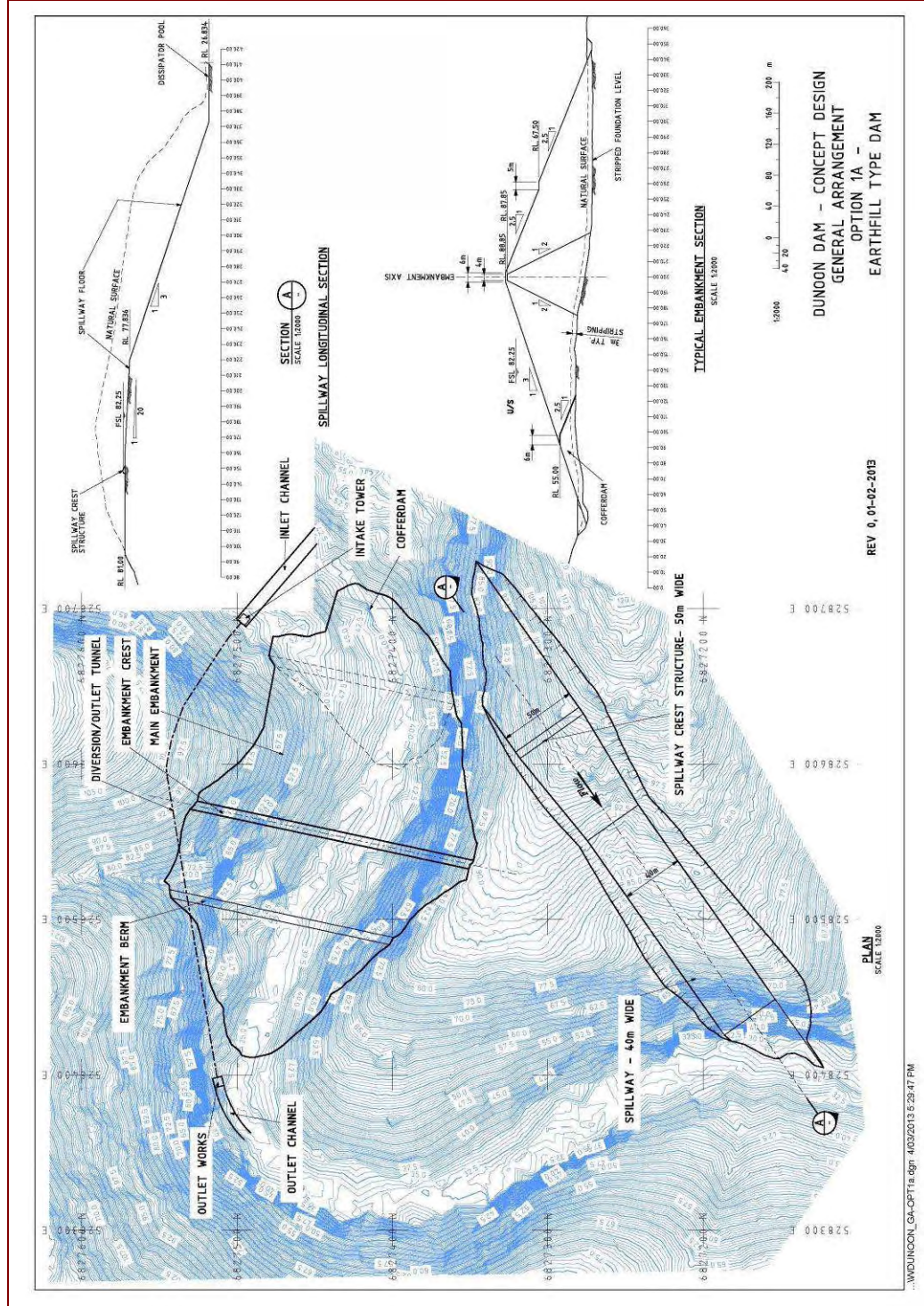


Figure 68: Original dam wall concept

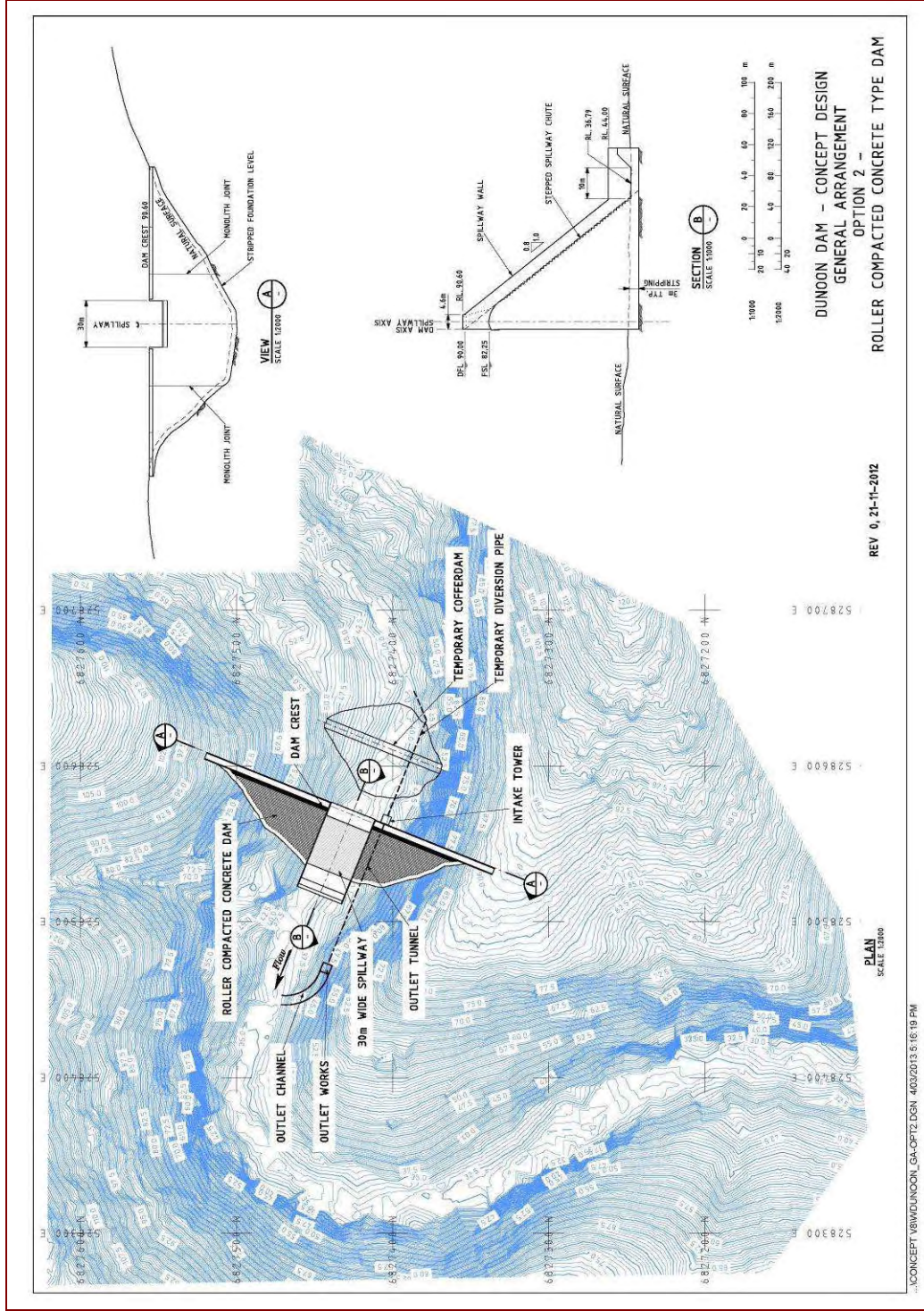


Figure 69: Letter dam wall concept

6.6 Future Impact Considerations

Should design of infrastructure change or once the exact location of access and construction corridors is finalised, this impact assessment can be modified depending on the foot print that the works will have upon the dam. As the design is an initial one and the actual methods and needs of construction are not yet finalised, the exact impact foot print may change and so future consideration will be required. This will be dependent upon whether an earth filled type dam or a rolled concrete construction type dam is determined to be the best option for the site, based on engineering constraints.

7.0 OBLIGATIONS AND OPPORTUNITIES

This chapter outlines the statutory requirements for the construction of the proposed Dunoon Dam arising from the heritage significance of the sites present, as well as identifying several opportunities presented by the sites and their significance which may not have previously considered.

7.1 Statutory Obligations

Due to the nature of the proposed Dam and its construction, combined with the significance of the sites individually and as a group, the provisions of certain statutory instruments must be met and satisfied. These are outlined in the sub-sections below.

7.1.1 NSW National Parks and Wildlife Act

The *NSW National Parks and Wildlife Act, 1974* (NP&W Act) is the main statutory instrument for the protection of Aboriginal Cultural Heritage within NSW. The NP&W Act's Aboriginal Cultural Heritage provisions are administered by the Office of the Environment and Heritage (OEH – formerly known as DECCW), part of the Department of Premier and Cabinet, and the provisions of Part 6 of the NP&W Act must be satisfied for to consent to any development that may affect Aboriginal Cultural Heritage.

The NP&W Act specifies an Aboriginal Object as

...any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.¹⁵⁰

Several offences relating to Aboriginal objects by people unauthorised to do so are identified within Section 86 as follows:

(1) *A person must not harm or desecrate an object that the person knows is an Aboriginal object.*

Maximum penalty:

(a) in the case of an individual—2,500 penalty units or imprisonment for 1 year, or both, or (in circumstances of aggravation) 5,000 penalty units or imprisonment for 2 years, or both, or

(b) in the case of a corporation—10,000 penalty units.

(2) *A person must not harm an Aboriginal object.*

Maximum penalty:

(a) in the case of an individual—500 penalty units or (in circumstances of aggravation) 1,000 penalty units, or

(b) in the case of a corporation—2,000 penalty units.

(3) *For the purposes of this section, circumstances of aggravation are:*

¹⁵⁰ <http://www.legislation.nsw.gov.au/viewtop/inforce>. Accessed 05-08-2010.

(a) that the offence was committed in the course of carrying out a commercial activity, or

(b) that the offence was the second or subsequent occasion on which the offender was convicted of an offence under this section.

This subsection does not apply unless the circumstances of aggravation were identified in the court attendance notice or summons for the offence.

(4) A person must not harm or desecrate an Aboriginal place.

Maximum penalty:

(a) in the case of an individual—5,000 penalty units or imprisonment for 2 years, or both, or

(b) in the case of a corporation—10,000 penalty units.

(5) The offences under subsections (2) and (4) are offences of strict liability and the defence of honest and reasonable mistake of fact applies.

(6) Subsections (1) and (2) do not apply with respect to an Aboriginal object that is dealt with in accordance with section 85A.

(7) A single prosecution for an offence under subsection (1) or (2) may relate to a single Aboriginal object or a group of Aboriginal objects.

(8) If, in proceedings for an offence under subsection (1), the court is satisfied that, at the time the accused harmed the Aboriginal object concerned, the accused did not know that the object was an Aboriginal object, the court may find an offence proved under subsection (2).¹⁵¹

Only when consent has been granted to a person by OEH can any of the above actions be undertaken. OEH can at any time grant or withdraw a permit should they believe it necessary to do so.

The above statutory requirements make it abundantly clear that any action within the scope of works for the proposed Dam and any associated infrastructure are, where actions are undertaken in areas of High potential or that impact already recorded sites are breaches of the act.

However, the following are considered defences under the Act:

(1) It is a defence to a prosecution for an offence under section 86 (1), (2) or (4) if the defendant shows that:

(a) the harm or desecration concerned was authorised by an Aboriginal heritage impact permit, and

(b) the conditions to which that Aboriginal heritage impact permit was subject were not contravened.

(2) It is a defence to a prosecution for an offence under section 86 (2) if the defendant shows that the defendant exercised due diligence to determine whether the act or omission constituting the alleged offence would harm an Aboriginal object and reasonably determined that no Aboriginal object would be harmed.

(3) The regulations may provide that compliance with requirements specified in the regulations, or in a code of practice adopted or prescribed by the regulations, is

¹⁵¹ <http://www.legislation.nsw.gov.au/viewtop/inforce>. Accessed 05-05-2011.

taken for the purposes of subsection (2) to constitute due diligence in determining whether the act or omission constituting the alleged offence would harm an Aboriginal object.

(4) It is a defence to a prosecution for an offence under section 86 (2) if the defendant shows that the act or omission constituting the alleged offence is prescribed by the regulations as a low impact act or omission.

Section 85A also states in regards to salvaging/removal of objects:

(1) The Director-General may, despite any other provision of this Act, dispose of Aboriginal objects that are the property of the Crown:

(a) by returning the Aboriginal objects to an Aboriginal owner or Aboriginal owners entitled to, and willing to accept possession, custody or control of the Aboriginal objects in accordance with Aboriginal tradition, or

(b) by otherwise dealing with the Aboriginal objects in accordance with any reasonable directions of an Aboriginal owner or Aboriginal owners referred to in paragraph (a), or

(c) if there is or are no such Aboriginal owner or Aboriginal owners—by transferring the Aboriginal objects to a person, or a person of a class, prescribed by the regulations for safekeeping.

(2) Nothing in this section is taken to limit the right of an Aboriginal owner or Aboriginal owners accepting possession, custody or control of any Aboriginal object pursuant to this section to deal with the Aboriginal object in accordance with Aboriginal tradition.

(3) The regulations may make provision as to the manner in which any dispute concerning the entitlement of an Aboriginal owner or Aboriginal owners to possession, custody or control of Aboriginal objects for the purposes of this section is to be resolved.

This means that the only impacts allowed are:

- Those in areas of High future potential authorised by an Aboriginal Heritage Impact Permit (AHIP);
- Those impacting reported sites that are authorised by an AHIP;
- Those in areas of Moderate Potential where due diligence is being exercised in accordance with this report (see Chapter 8); and
- In areas of Low Potential, as long as works proceed with caution following a Due Diligence assessment, which is the purpose of this report (see Chapter 8).

The application process and AHIPs themselves are discussed in the following chapter. Due to the sites located during the survey and the potential for others to exist, management recommendations for the proposed Dam area will need to be developed that will satisfy OEH that all possible action is being taken to ensure the protection of known and potential sites in cooperation with the registered stakeholders. These policies are outlined in the following chapter.

However, due to the potential for the proposed dam to be considered State Significant Infrastructure under Part 5.1 of the EP&A Act (see below), the AHIP process would not have

to be undertaken. However, any reporting as part of an Environmental Impact Statement would still be of a level that would otherwise meet the requirements for a permit application.

Any approvals under Part 5.1 would therefore not need to reference the NP&W Act, but would be guided by them, therefore Rous Water should be familiar with the provisions of the NP&W Act so as to ensure a full understanding of any Part 5.1 approvals requirements.

7.1.2 Lismore Local Environment Plan 2000

The draft *Lismore City Council Local Environment Plan* (LEP) undertakes to protect and conserve both the natural and cultural heritage of the Lismore Local Government Area. Specifically, the LEP Section 5.10 (Heritage Conservation) states the following:

The objectives of this plan in relation to heritage are:

- (a) to conserve the environmental heritage of Lismore City, and*
- (b) to conserve the heritage significance of existing significant fabric, relics, settings and views associated with the heritage significance of heritage items and heritage conservation areas, and*
- (c) to ensure that archaeological sites and places of Aboriginal heritage significance are conserved, and*
- (d) to allow for the protection of places which have the potential to have heritage significance but are not identified as heritage items, and*
- (e) to ensure that the heritage conservation areas throughout Lismore City retain their heritage significance.*

Due to the anticipated planning pathway, this assessment should consider the principles of the LEP concerning Cultural Heritage, however, it will not be bound by them.

7.1.3 NSW Aboriginal Land Rights Act, 1983

The *NSW Aboriginal Lands Rights Act, 1983* sets out the role of the State and Local Aboriginal Lands Councils as follows:

(4) A Local Aboriginal Land Council has the following functions in relation to Aboriginal culture and heritage:

- (a) To take action to protect the culture and heritage of Aboriginal persons in the Council's area, subject to any other law,*
- (b) To promote awareness in the community of the culture and heritage of Aboriginal persons in the Council's area.*

As the LALC is obligated to protect Aboriginal culture and heritage within its area of responsibility, any future consultation regarding the proposed Dam area, or any other site within the Ngulingah boundaries, must be undertaken with the Land Council's involvement. This does not preclude the involvement of other groups, but ensures the Land Council, as the legislatively obligated Aboriginal body in the area, is consulted at all times.

7.1.4 Environment Protection & Biodiversity Conservation Act, 1999

The Environmental Protection and Biodiversity Conservation Act, 1999 (the EPBC Act) protects items, areas and place of national and commonwealth heritage. Specifically, the item, area or place must be listed on either the National Heritage List (as a place of national heritage significance) or on the Commonwealth Heritage List (as a place of significance that is owned or managed by the Commonwealth) for this Act to be triggered. Consequently, the proposed Dunoon Dam does not currently trigger the EPBC Act from an historic or indigenous heritage perspective.

Rous Water should note that the nearby Terania Creek is listed on the National Heritage List as part of the Gondwana Rainforests listing as a place of Natural Heritage. The impact of the dam on the natural heritage values of that place would need to be assessed as part of any EIS by an experienced natural heritage consultant.

7.1.5 Environmental Planning & Assessment Act, 1979

The NSW Environmental Planning and Assessment Act, 1979 (the EP&A Act) outlines procedures for development relating to places of environmental heritage. Should the dam proceed to an approval process as significant infrastructure, the requirements of the EP&A Act would need to be met at the time that any environmental assessment is being considered.

Additionally, as the Dunoon Dam will likely be considered State Significant Infrastructure (SSI) under Part 5.1 of the Act, the Director-General of Planning and Infrastructure would outline the requirements for any future Environmental Impact Statement (EIS). These requirements would include provisions for cultural heritage and the current report would act as the basis for additional research to accompany the EIS. The Minister for Planning would then act as the a authority and under Part 5.1, permits such as Aboriginal Heritage Impact Permits would not be required. However, the reporting for the cultural heritage component EIS would be of a level that would normally suffice for such a permit application.

As such, Rous Water will need to be aware of the cultural heritage provisions of the other legislation presented here, as the input provided to the Director General by the agencies overseeing those acts will be in line with current standards and best practice for those agencies.

7.1.6 NSW Heritage Act, 1977

The *NSW Heritage Act, 1977* provides protection for places of historic heritage that are significant at the state level within NSW. As there are currently no places of heritage significance listed on the NSW State Heritage Register within the Dunoon area, the Section 60 provisions of this Act do not apply (protection for state-heritage listed places). Further, as the historic background and field survey for this project revealed little European activity of historic importance, it is unlikely that any unexpected archaeological resources would be of high enough significance to trigger the Section 139 (archaeological/relic provisions/protection) requirements of the Act.

However, due to the potential for the proposed dam to be considered State Significant Infrastructure under Part 5.1 of the OEI Act, the Section 139 process would not have to be

undertaken. However, any reporting as part of an Environmental Impact Statement would still be of a level that would otherwise meet the requirements for a permit application.

Any approvals under Part 5.1 would therefore not need to reference the NP&W Act, but would be guided by them, therefore Rous Water should be familiar with the provisions of the Heritage Act so as to ensure a full understanding of any Part 5.1 approvals requirements.

7.2 Opportunities

The site of the proposed Dam area offers several opportunities with regards to Aboriginal Heritage Significance, which may not have previously considered. The following options are outlined briefly but should not be considered an exhaustive list of possibilities. Although there is some non-Aboriginal heritage of local significance, its interpretation and utilisation would be as an adjunct to the Aboriginal Heritage of the proposed dam site, complementing works undertaken to enhance the Aboriginal Heritage of the site, not stand alone.

7.2.1 Interpretation as Part of Development

The interpretation of the Aboriginal and Non-Aboriginal Cultural Heritage Significance of the Dunoon Dam as an integrated and planned part of the future development is a way in which to assist in the education of the wider community as to the history of the land and its peoples. Any such interpretation would need to be undertaken in conjunction with the Aboriginal Stakeholder Groups and the broader community. Interpretation could form part of a walk or cycleway around the dam, outlining how the dam area was accessed and used over time and how the dam site fits into the larger regional picture.

7.2.2 Interpretation as Part of Wider Cultural Heritage Landscape

The interpretation of the Aboriginal Cultural Heritage Significance of the proposed Dam area, as an integrated and planned part of the larger Bundjalung Cultural Landscape's network of sites and cultural history, is a way in which to assist in the education of the wider community as to the history of the land and its peoples. Any such interpretation would need to be undertaken in conjunction with the Aboriginal Stakeholder Groups, Land Councils and Local Councils in the Northern Rivers region. Although (to protect them) individual sites themselves may not form part of this interpretation, the overall interaction of the Bundjalung people with the landscape could form a valuable and educational aspect of the tourist attraction for the North Coast area.

7.2.3 Community Involvement as Part of Future Research

Should the dam proceed in future, or additional pre-construction research require archaeological excavation to be undertaken within the proposed Dam area, the involvement of the Aboriginal Stakeholder Groups should be sought. Additionally, with the consent of the LALC and other groups, a wider section of the community could be given the opportunity to participate in some parts of any excavation to assist in expanding the communities' understanding of local Aboriginal Cultural Heritage and to assist in educating the wider community in aspects of Aboriginal Cultural Heritage.

7.2.4 Opportunities for Future Aboriginal Involvement

Rous Water has the opportunity to work with the local Aboriginal groups in protecting, preserving and in some cases, interpreting Aboriginal sites located on its current land holdings. Additionally, Rous Water can involve local Aboriginal people as part of any future works on the site to provide work options for the local Aboriginal community. These work options need not be limited to cultural heritage matters, but should include them through site maintenance, interpretation and recording.

7.2.5 Implementing Opportunities

Rous Water should manages these opportunities separately from the recommendations in Chapter 8, so as to provide both flexibility and practicality to their potential use. The opportunities outlined above, or others which may present themselves, should be considered and then implemented carefully by Rous Water, with clear parameters in place before outside discussions begin. Additionally, Rous Water will need to consult with community groups over such matters and ensure that all parties interested have a voice, but that the process is focused on specific goals.

8.0 MANAGEMENT RECOMMENDATIONS

This chapter outlines the management recommendations that Rous Water is will need to adopt to ensure that its statutory obligations are met, both in its custodial role over sites on land it currently owns and during future development. These Policies will also provide the maximum benefit for all stakeholders, based on the opportunities that the cultural heritage significance that site of the proposed Dam area possess.

However, these polices are not all that may be required for the management and protection of items within the dam area, as additional research and investigation will likely be required in some areas and with regards to certain sites.

8.1 Using these Management Recommendations

These management recommendations are designed to allow those conducting works or future studies in the proposed Dam area to have a clear and concise understanding of what actions must be taken. These actions are designed to ensure that the cultural heritage of the proposed Dam area and its significance are not impacted upon through development, unless that impact has been sanctioned by OEH or mitigated through proper management.

These policies are broken into two sections: Current Custodial and Research Guidelines and Indicative Future Management Guidelines. The first section outlines methods and requirements for the ongoing maintenance of the sites already located by Rous Water during ownership and management of the dam site prior to any potential development. The second section provides indicative polices that may be part of any future EIS, to enable Rous Water to have a clear idea of future obligations regarding the heritage of the site during any future development.

A chart of actions is provided at the end of this chapter to further clarify the policies and assist in their implementation.

Management Section A - Current Custodial and Research Guidelines

8.2 Additional Investigation Requirements

These investigations can be undertaken prior to, or concurrent with any future EIS for the site.

8.2.1 Known Archaeology

The known Aboriginal archaeology of the proposed Dunoon Dam site consists of a collection of grinding grooves within **S 14T(5)(b), S 14T(5)(e)**, some sacred trees in the **S 14T(5)(b), S 14T(5)(e)** and artefacts within the **S 14T(5)(b), S 14T(5)(e)** of the site. Most importantly, the burials are located in the area **S 14T(5)(b), S 14T(5)(e)**. This distribution of sites has conformed to the predictive models **S 14T(5)(b), S 14T(5)(e)**, but due to previous disturbance of the land, some **S 14T(5)(b), S 14T(5)(e)** did not have locatable sites on them.

The non-Aboriginal sites are spread across the dam, with their significance not thresh holding for major recommendations or protection. However, these sites are listed below and provided with some general management outlines to allow Rous Water to move forward with planning as required.

8.2.2 Potential Archaeology

The maps provided in Figure 70 indicate the areas for potential within the dam site which have been surveyed and for those where vegetation prevented effective survey. Though no Potential Archaeological Deposits (PADS) were identified, the potential for them being present still exists. However, surface finds did not indicate with any certainty where these might be. However, the areas identified near **S 14T(5)(b), S 14T(5)(e)** as high probability in the maps below, have the most potential for any one are in the valley to be a PAD.

S14T(1)(d),(f),(g);(5)(b),(e)

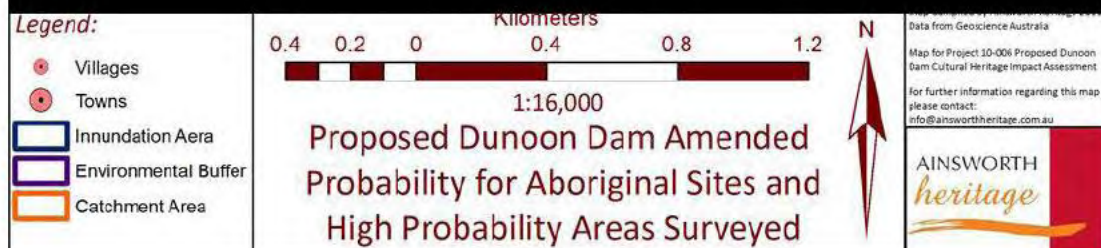


Figure 70: Areas for future research

8.3 Future Site Find Management Recommendations

The main types of sites identified during research and field works were grinding grooves, scarred trees, artefacts and burials. Should additional sites be discovered within the proposed dam site, the following general guidelines should be followed to ensure the sites integrity until a qualified archaeologist can assess the site. The images on the following pages illustrate the appearance of these site types.

8.3.1 Scarred Trees

Should any additional or potential scarred or marked trees be located **S14T(5)(b),(e)** **S14T(5)(b),(e)** follow the Stop Works Procedures. The site should be recorded and no works should be undertaken with the potential to impact the tree and any work with the potential to impact the tree should be monitored, with the tree being roped off to prevent accidental damage, until such time as it is properly recorded and OEH has agreed to the planned management and/or mitigation of impact to the site.

8.3.2 Artefact Concentration, Isolated Artefacts and Open Campsites

These sites represent places of aboriginal occupation. *“These sites are mostly surface scatters of stone, sometimes near fireplaces. Recent studies have shown them to have significant scientific and cultural value.”*¹⁵² These sites can also indicate where further sub-surface archaeological materials may be encountered,

Should a concentration of artefacts or an isolated artefact be identified, follow the Stop Works Procedures. Additionally, any work with the potential to impact the site should also stop until the site can be properly investigated and the standard Stop Work Policy followed, until such time as it is properly recorded and OEH has agreed to the planned management and/or mitigation of impact to the site.

These sites are often the location of PADS and should be treated as such until test pitting can determine if a PAD is present or not.

8.3.3 Grinding Grooves and Dishes

Additional grinding grooves have the potential to occur either **S14T(5)(b),(e)** **S14T(5)(b),(e)** Additionally, some may be found on **S14T(5)(b),(e)** **S14T(5)(b),(e)** These grooves are typically very smooth and do not match the natural patterns of weathering of nearby stone of a similar type.

Should a grinding groove be identified, follow the Stop Works Procedures. Additionally, any work with the potential to impact the site should also stop until the site can be properly investigated and the standard Stop Work Policy followed until such time as it is properly recorded and OEH has agreed to the planned management and/or mitigation of impact to the site.

¹⁵² Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW.

8.3.4 Carved Stones

These ceremonial markers can be important sign posts within the landscape for Aboriginal people. Should stone exhibiting linear or spiral patterning, not consistent with weathering or fractures caused by slasher/dozer blades, the stone should be treated as a site until it is determined otherwise.

Should a carved stone be identified, follow the Stop Works Procedures. Additionally, any work with the potential to impact the site should also stop until the site can be properly investigated and the standard Stop Work Policy followed until such time as it is properly recorded and OEH has agreed to the planned management and/or mitigation of impact to the site.

8.3.5 Quarries

Quarries will exist where S 14T(5)(b),(e) Stone types such as obsidian, silcrete, greywacke, quartzite were used for tool manufacture and ironstone was used locally as a hammer stone.

Should an Aboriginal quarry be identified, follow the Stop Works Procedures. Additionally, any work with the potential to impact the site should also stop until the site can be properly investigated and the standard Stop Work Policy followed until such time as it is properly recorded and OEH has agreed to the planned management and/or mitigation of impact to the site.

8.3.6 Burials, Burial Markers, and Stone Piles Associated with them

S14T(5)(b),(e)

Should any human remains or any unidentifiable bone material be encountered during any works on the Proposed Dam Area, **all work must stop immediately** and the site should be protected from additional disturbance.

The NSW Police should be contacted and the Police will then work with OEH to determine whether or not the remains are of Aboriginal origin. Further works on site will need to be undertaken in accordance with Police and/or OEH guidance and, in the case that the remains are Aboriginal, the Ngulingah LALC and other local Aboriginal groups.

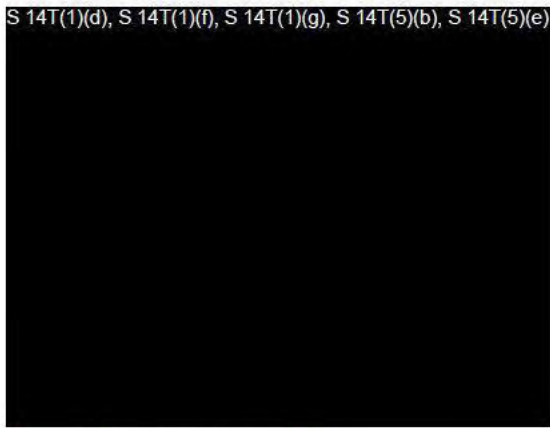


Figure 71: S 14T(5)(b), S 14T(5)(e) – Flake.

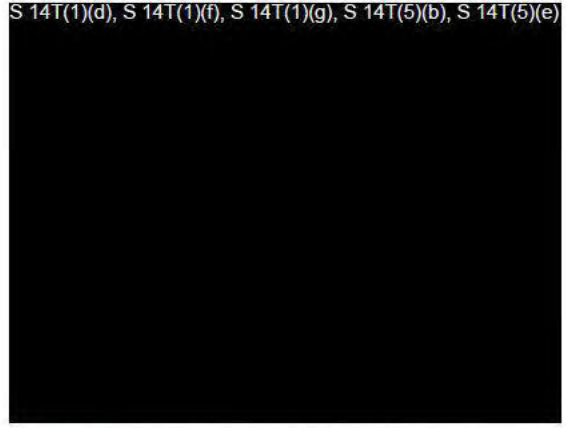


Figure 72: S 14T(5)(b), S 14T(5)(e) – Grinding Stone.

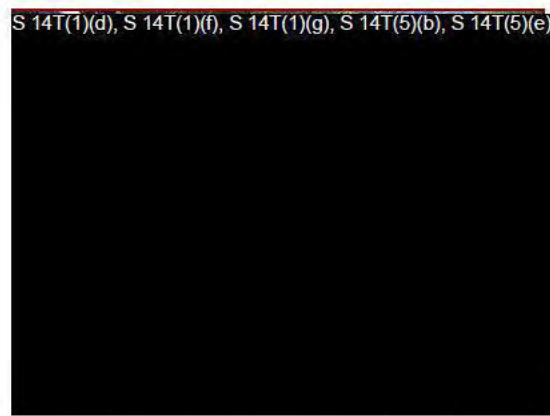


Figure 73: S 14T(5)(b), S 14T(5)(e) – Grinding Groove.

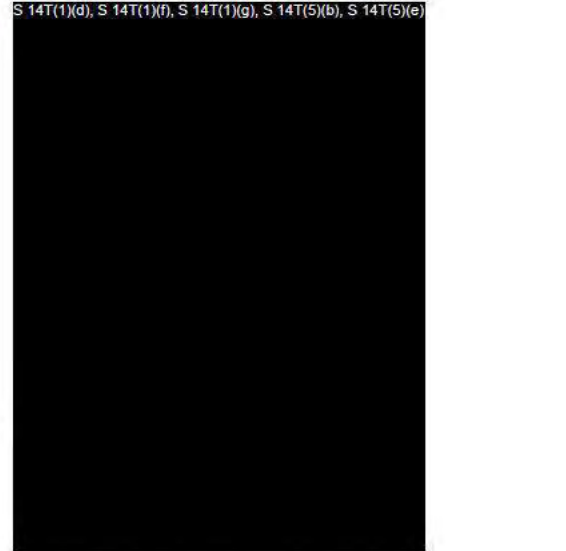


Figure 74: S 14T(5)(b), S 14T(5)(e) – Scar Tree.

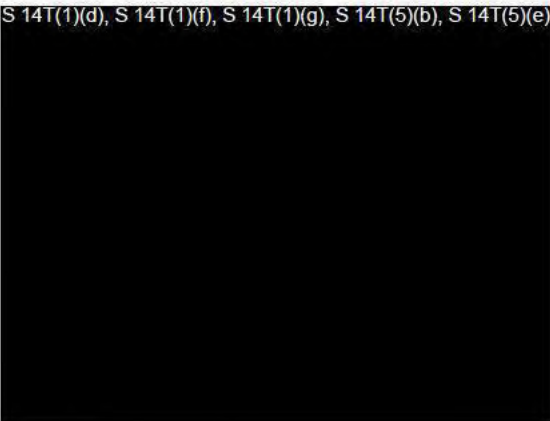


Figure 75: Carved Stone.

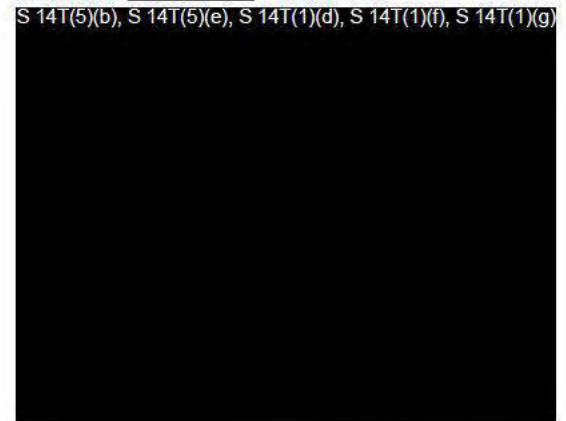


Figure 76: Stone Mound – Burials may appear similar.

8.4 General Management recommendations

These recommendations can be utilised by Rous Water now and as the basis of future EIS documents, as they are broader in scope and provide general guidance for the management and planning of the proposed dam.

8.4.1 Adoption of the Burra Charter

The conservation and management of the archaeological resources should be carried out in accordance with the principles of the *Australia ICOMOS Burra Charter, 1999*. The articles which set out the principles of the Burra Charter are reproduced as follows:¹⁵³

Article 2 - Conservation and Management

- 2.1 *Places of cultural significance should be conserved.*
- 2.2 *The aim of conservation is to retain the cultural significance of a place.*
- 2.3 *Conservation is an integral part of good management of places of cultural significance.*
- 2.4 *Places of cultural significance should be safeguarded and not put at risk or left in a vulnerable state.*

Article 3 - Cautious Approach

- 3.1 *Conservation is based on a respect for the existing fabric, use, associations and meanings. It requires a cautious approach of changing as much as necessary but as little as possible. The traces of additions, alterations and earlier treatments to the fabric of a place are evidence of its history and uses which may be part of its significance. Conservation action should assist and not impede their understanding.*
- 3.2 *Changes to a place should not distort the physical or other evidence it provides, nor be based on conjecture.*

Article 4 - Knowledge, Skills and Techniques

- 4.1 *Conservation should make use of all the knowledge, skills and disciplines which can contribute to the study and care of the place.*
- 4.2 *Traditional techniques and materials are preferred for the conservation of significant fabric. In some circumstances modern techniques and materials which offer substantial conservation benefits may be appropriate. The use of modern materials and techniques must be supported by firm scientific evidence or by a body of experience.*

Article 5 - Values

- 5.1 *Conservation of a place should identify and take into consideration all aspects of cultural and natural significance without unwarranted emphasis on any one value at the expense of others.*

Article 12 – Participation

Conservation, interpretation and management of a place should provide for the participation of people for whom the place has special associations and meanings, or who have social, spiritual or other cultural responsibilities for the place.

¹⁵³ ICOMOS Australia. 1999. *Australia ICOMOS Burra Charter, 1999*.

Article 24 - Retaining associations and meanings

24.1 Significant associations between people and a place should be respected, retained and not obscured. Opportunities for the interpretation, commemoration and celebration of these associations should be investigated and implemented.

24.2 Significant meanings, including spiritual values, of a place should be respected. Opportunities for the continuation or revival of these meanings should be investigated and implemented.

Rous Water Needs To: Fully understand the sections of the Burra Charters outlined above, to ensure that any actions taken in the process of planning and constructing the proposed Dunoon Dam are done so in a way that ensures best practice heritage management is applied throughout.

8.4.2 Continuation of Consultation

As all three registered stakeholders for the project identified with the Ngulingah LALC, consultation with the Ngulingah LALC and the other registered stakeholder groups does not and should not end with the compilation of this report.

Consultation should continue as an integral part of the eventual planning and development stages of the project, to ensure that the registered stakeholders are continually appraised regarding the progress of planning and works and also provided with the opportunity to inspect works that have been carried out near sites of cultural heritage.

As the LALC is obligated to protect Aboriginal culture and heritage within its area of responsibility (see Section 7.1.3), any future consultation regarding the proposed Dam area or any other site within the Ngulingah LALC boundaries, must be undertaken with the Land Council's involvement. This does not preclude the involvement of other groups, but ensures the Land Council, as the legislatively obligated Aboriginal body in the area, is consulted at all times.

Additionally, this continued cooperative planning and consultation will, over time, assist in creating stronger and more beneficial links between the Aboriginal Groups and Rous Water together with those engaged in development in the area. The gaining of a mutual understanding and respect through continual and ongoing positive collaboration and consultation, may enable these various, and at times opposed parties, to work towards results that benefit all parties both within the proposed Dam area and in the Greater Lismore area.

Should planning for the proposed dam go ahead, this ongoing consultation will need to focus on negotiating the levels of impact acceptable to the registered stakeholders. However, this process has already been begun by this report and should only proceed with a full understanding of the current positions of the current stakeholders.

Statutory Actions: Ensure that each of the registered groups is appraised of the projects progress less than every six months at the minimum to ensure that the consultation cycle is not broken and that each group is given the opportunity to comment on future project requirements.

8.4.3 Best Practice Guidelines

These OEH guidelines should be used at all times to ensure best practice procedures for archaeological sites are carried out in the proposed Dam area. These guidelines are:

- Aboriginal Cultural Heritage Standards & Guidelines Kit;
- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010;
- Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW; and
- Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW.

These documents, along with other resources can be downloaded from the OEH website at <http://www.environment.nsw.gov.au/chpublications/index.htm>.

Recommended Actions: Provide managers and planners with copies of the above documentation for reference purposes when undertaking planning for the proposed Dunoon Dam.

8.4.4 Training

Training of Rous Water staff and other relevant persons who will be involved in the site should be undertaken to raise awareness of the site's significance, their key features and the policies and practices for their management. This document can form the basis of any such training. Rous Water staff involved in proposed Dam area should have at least a basic understanding of the Aboriginal and Non-Aboriginal history of the area, as well as a familiarity with the individual sites located.

Specific site awareness training should be initiated for anyone involved in works within areas of High Potential. This Cultural Heritage training should be geared to providing a general overview of the area, its importance to the local Aboriginal peoples and the types of sites that are known and may be encountered and how to identify them. This training should also include the Stop Work Policy (section 8.2.11) and the Cultural Heritage Management Flow Chart (section 8.6). Emergency contact numbers, for use in the event of a new item, object, site or place being discovered, should also be provided as part of training.

Recommended Actions: Include, as part of its overall site awareness training, especially should the dam be approved, any information pertinent to the management of cultural heritage and the required steps which need to be taken to mitigate any impact.

8.4.5 Managing Disturbance

Disturbance of any archaeological feature or heritage item should, first and foremost, seek to avoid the resource. Should it be necessary to disturb a site due to severe site constraints or the need for important infrastructure works such as flood mitigation etc., the following policies need to be followed.

8.4.5.1 Avoid Disturbance

Future works should be designed, **first and foremost**, to avoid disturbing any archaeological features and potential archaeological resources. Future development should consider the potential archaeological resource early in the design process and divert works away from the resource.

This means that it is considered Best Practice to avoid known sites altogether.

As such, avoidance of disturbance provides Best Practice principles to development as well as assisting in minimising costs and time delays for future works. This avoidance of impact is also viewed favourably by OEHL when assessing unforeseen impacts

8.4.5.2 Assess Disturbance

If an archaeological feature or area of archaeological potential is likely to be unavoidably disturbed, OEHL should be notified and an AHIP sought and approved **before** any works commence, unless works are undertaken under Part 5.1 of the EP&A Act.

8.4.5.3 Monitor Disturbance

If it is possible that the archaeological resource may be unavoidably disturbed, relevant works should be monitored by an appropriately qualified and experienced archaeological professional in conjunction with members of the Aboriginal Stakeholder Groups, to ensure that any disturbance is appropriately managed and recorded.

8.4.5.4 Record and Research

If the archaeological resource must be disturbed, monitoring and/or salvage excavation to fully record the resource should be undertaken, dependent on the requirements of the AHIP application response. This should occur before the archaeological resource is removed and should be undertaken by an appropriately qualified and experienced archaeological professional, in conjunction with the Aboriginal Stakeholder Groups. If possible, any archaeological excavation should be carried out as part of an ongoing process of research for the site.

Aboriginal Stakeholder Groups should be involved in any test pitting and/or surface clearance monitoring and management of any sites must be undertaken with the consent of OEHL and the Aboriginal Stakeholder Groups. Additionally, objects must only be removed from site with the appropriate consent of OEHL and the Aboriginal Stakeholder Groups and with a Care Agreement in place.

8.4.5.5 Research Design

The research design for any archaeological work on the site should incorporate research questions which have been specifically designed for the subject site to ensure that any information acquired from the site can contribute useful research information.

Recommended Actions: When planning any works for the proposed dam, Rous Water should follow the above steps in determining what must be done to protect each site or to mitigate impact upon each site. By doing so, Rous Water will be able to improve its ability to meet its statutory heritage obligations.

8.5 Using Test Excavations

Under the NP&W Act, certain limited excavations can be undertaken to assess whether or not sub-surface archaeological deposits are present. These test excavations do not seek to determine the exact nature of a Potential Archaeological Deposit (PAD), they merely see to determine if one is present or absent. The site of the **S 14T(5)(b), S 14T(5)(e)** has the potential to be a PAD, and therefore would be likely candidate for limited test excavations.

Statutory Actions: Use the more specific management polices later in the chapter, to determine where test excavation may be appropriate for ongoing investigations. These are governed by the test excavation parameters provided by EPA.

8.6 Impact Permits and Applications

NOTE: An AHIP application would only need to be made for works not part of a Part 5.1 development under the EP&A Act, such as preliminary sub-surface excavations of the burials.

The provisions of Part 6 of the *National Parks and Wildlife Act, 1974* require that any action that may disturb, excavate for research or remove an Aboriginal object or destroy, deface or damage an Aboriginal Place **must have a permit** issued by the Director-General, allowing such action to take place. A permit would be required for action such as excavating the burials prior to works as part of ongoing research, but not if the dam proceeds under Part 5.1 if the EP&A Act.

Should Rous Water continue investigations into the Dunoon Dam proposal, an Aboriginal Heritage Impact Permits (AHIP) must be applied for and granted before any works that would affect known or potential Aboriginal sites in the proposed Dam area begin.

AHIP's are applied for under Section 90 of the Act and the application form for an AHIP is available from OEH at:

<http://www.environment.nsw.gov.au/conservation/aboriginalculture.htm#whattodo>

When submitting an AHIP application, the following material must accompany the application (one paper copy and one electronic copy of Objects 1 to 6 are required):¹⁵⁴

1. Aboriginal Heritage Information Management System (AHIMS) site numbers or, for new sites, the correctly filled out AHIMS site cards with a unique site identifier.
2. Documentation demonstrating Aboriginal community consultation (as required by the Community Consultation Guidelines for Applicants), specifically:
 - a. A consultation log, detailing the consultation undertaken;
 - b. Evidence that the applicant has written to OEH and other parties to obtain information on known Aboriginal groups to be consulted (copies of letters will be sufficient);

¹⁵⁴ OEH. 2009. *Supporting Information Requirements for AHIP Applications*.

- c. Evidence of advertisement or other public media seeking community input; and
 - d. The outcome of the consultation, including the views of the Aboriginal community on the methodology and impact of the proposed activities, how these views have been addressed, and any mitigation and conservation measures that have been negotiated.
3. Maps:
 - a. A topographic map (e.g. 1:25,000) clearly showing the location of the subject lands, development boundary, impact area and sites or Potential Archaeological Deposits (PADs) for which a permit is sought (aerial photographs, detailed site maps, title plans etc. may also be provided). The map should include clear cadastre information including a lot and DP number (as identified in the application), and the local government area, parish and zone (as applicable), as well as
 - b. A map of the location of the land to be subject of the application which clearly defines the boundaries and proposed geographic extent of the application.
4. Description of research activities to be undertaken for section 87 applications, if applicable.
5. Any development consent, Environmental Impact Assessment and/or Review of Environmental Factors, if applicable.
6. Information about what the applicant intends to do with collected objects, for example, if objects will be transferred to the Australian Museum, or whether a care and control agreement will be sought.
7. Three paper copies, plus one electronic copy of an Aboriginal Cultural Heritage Impact Assessment Report, which conforms to the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. Any archaeological surveying, site recording and research methodology that is included in the Assessment Report must be consistent with the requirements in the Standards and Guidelines Kit and the Code of Practice. The Aboriginal Cultural Heritage Impact Assessment Report must contain, but is not limited to:
 - Table of contents – Include a table of contents, including a list of tables, charts, plates, figures and appendices.
 - Summary – Unless the report is very short, include a summary or abstract at the front of the report. This should be an overview of the main findings, interpretation of the results, and recommendations.
 - Introduction – Include:
 - details of the proponent
 - explanation of the purpose of the archaeological investigation
 - project brief
 - subject area, and how this is defined
 - objectives of the assessment
 - overall project framework (development application, zoning study, etc.)

- Investigator and contributors – Include details of the qualifications and experience of the person carrying out the investigation and a list of contributors and their affiliations, specifically: reviewers, advisors, participants in survey activities
- Description of development proposal – Describe the proposed development, highlighting activities that have the potential to harm Aboriginal objects
- Previous archaeological work
- Landscape context
- Regional character
- Predictions
- Sampling strategy – Provide the information set out in Requirement 5 and Section
- Field methods – Describe how the archaeological survey, and if relevant, the archaeological test excavation, was conducted and how information was recorded, including the dates and people involved
- Results – Describe what was found during the survey (and if relevant, archaeological test excavation). Include an interpretation of the results, a table of survey coverage data as set out in Requirement 10, and a table of findings as follows:
- Analysis and discussion – The results must be interpreted using an archaeological framework that constructs an Aboriginal settlement history of the subject area.
- The settlement history must be placed in a local and regional archaeological context.
- Use graphs, charts and tables to effectively summarise data to support the interpretations where informative.
- Scientific values and significance assessment – Identify the archaeological values and assess their significance. The assessment must be supportable and the assessment criteria must reflect best practice assessment processes as set out in the Burra Charter.
- Impact assessment – Evaluate and discuss the potential archaeological impacts of the proposal. For known sites and areas of archaeological potential, the information must also be summarised in a table as follows:
- Management and mitigation measures – Evaluate the various options for management of the archaeological impacts, and justify those that are recommended.
- Recommendations – These must be clear recommendations for the conservation of archaeological values and mitigation of impacts to the values. If further archaeological work such as salvage excavation is recommended, justification must be provided for this in the ‘Management and mitigation’ section of the report.
- References – Use Harvard style (author, date) referencing.

- Maps and figures – These must be used as necessary to support the report, as set out in the preceding requirements.
- Appendices – AHIMS and other heritage register information must be included as appendices to the report.

Additionally, the OEH publication *Guide to determining and issuing Aboriginal heritage impact permits* should be used when compiling an AHIP to ensure that the application will provide the required information in the correct format for the application to be properly assessed. This guide can be downloaded from:

<http://www.environment.nsw.gov.au/chpublications/index.htm>

In order to ensure the AHIP application is successful, the areas of high probability that were inaccessible or too densely vegetated (Figure 66) will need to be assessed by a field survey and their results incorporated into this report as an addendum. Additionally, limited test excavations can be undertaken to improve the data for the sites near the S 141(5)(b), S 141(5)(e) [REDACTED].

The AHIP will also contain details on any Care Agreements, Test Excavations, Curatorial Policies and Research Questions (see following sections), which should also be submitted as an addendum or added directly to this report.

Statutory Actions: AHIP's would only be required for works outside of those undertaken under Part 5.1 of the EP&A Act.

8.7 Unexpected Discovery of an Archaeological Feature

Heritage and archaeological assessments may, at times, fail to identify a heritage issue and this normally relates to potential (sub-surface) archaeological resources or those that could not be located due to site or survey constraints. Note that any works which may reveal or disturb archaeological resources require an AHIP from EPA, unless undertaken under Part 5.1 of the EP&A Act.

If any unexpected archaeological resources, whose disturbance is not covered under a current AHIP, the following Stop Work Procedure should be followed:

STOP WORK	Immediately
CONTACT	A qualified archaeologist and Rous Water as soon as possible
NOTIFY	The archaeologist should notify the Rous Water’s Heritage Officer, the Aboriginal Stakeholder Groups and EPA
ASSESS	The archaeologist in conjunction with OEH and the Aboriginal Stakeholder Groups should assess the significance of the resource and recommend a course of action eg: <ul style="list-style-type: none"> • Protect and avoid; or • Investigate, record and remove; or • Excavate, record and preserve
APPLY	To OEH for an AHIP if necessary, if not undertaken under Part 5.1 of the EP&A Act.
RECOMMENCE	Only when OEH has approved a course of action

Table 22: Stop Work Chart

Should the work being undertaken be of a large nature, it is possible in some instances to isolate the site and continue working without further disturbing the site. See Section 8.3 for details regarding what courses of action should be followed in each particular case.

Recommended Actions: Ensure that every on site worker who will be undertaking ground disturbing activities, be trained in the use of and provided with the Stop Work Procedure and that it is followed at all times.

8.8 Recognition of the Larger Archaeological Landscape

Rous Water, in conjunction with the Aboriginal Stakeholder Groups, should undertake to recognise the high degree of Aboriginal cultural heritage significance of the larger archaeological landscape of the area, which includes known and potential sites and the **S14T(5)(b),(e)**

Development in this area should assess its impact upon not only the immediate area of the development, but also the impact upon the significance of the larger network of sites in the broader archaeological landscape.

Recommended Actions: Ensure that ongoing infrastructure work in the future consider their impact at both the local and regional level.

8.9 Future Information Sources

Rous water needs to be aware that future information regarding Cultural Heritage could come to light and that such information should be incorporated into future reports and appended to the current report, to ensure that a current and complete picture of the sites cultural heritage values are maintained.

Recommended Actions: That all future information sources of Aboriginal Cultural Information are accepted and appended to this report and given consideration in any future studies of the dam site.

8.10 Managing the Burials

The burial field in the § 141(6)(d), s of the proposed dam is the site upon which most focus will fall, as it is beyond a doubt the most significant site within the valley. The following is a guide for Rous Water, that provides the possible future steps and actions that will be required in managing the burials in the coming years.

Action	Requirements	Outcomes	Potential Aboriginal Response
Further investigate the burials through GPR	<ul style="list-style-type: none"> Aboriginal consent and involvement; Consultants experienced in investigating human remains through GPR; and Ongoing consultation with Aboriginal groups. 	Likely that no additional information would be forth coming due to the nature of the soil, but could return useful data, however unlikely.	Would likely support non-intrusive studies such as GPR
Further investigate the burials through limited excavation	<ul style="list-style-type: none"> Aboriginal consent and involvement; Consultants experienced in investigating human remains through excavation and analysis; AHIP application and at least 6 month lead in time; and Ongoing consultation with Aboriginal groups. 	Could return positive identification of human remains and/or grave goods, however, remains could have disappeared over time, meaning that site would still be considered a burial by EPA. This avenue would just confirm a positive identification, not disprove it.	Would likely oppose such investigations unless absolutely necessary, such as dam proceeding to development
Leave burials alone indefinitely should dam not proceed	<ul style="list-style-type: none"> Aboriginal consent and involvement; Yearly monitoring of site to ensure its integrity; and Ongoing consultation with Aboriginal groups. 	Protection and preservation of site.	Full support from the Aboriginal community for this outcome would be expected.
Inundate burials as part of dam progressing	<ul style="list-style-type: none"> Aboriginal consent and involvement; The Director General of Planning NSW, would detail all requirements for actions in regards to the burials, however, Chapter 8 provides 	Inundation of site with no damage to graves, with detailed drawings of site providing a permanent record.	Some support could be expected if dam is to proceed, but opposition would still remain due to loss of access to the burials. This is the least preferable option to the Aboriginal stakeholder groups, as it would result in either the burials becoming

Action	Requirements	Outcomes	Potential Aboriginal Response
	<p>a summary of what could be expected from such requirement</p> <ul style="list-style-type: none"> • AHIP application and at least 6 month lead in time if works is not undertake under Part 5.1 of the EP&A Act; • Detailed surveyed drawings of site; and • Ongoing consultation with Aboriginal groups. 		<p>inaccessible or being destroyed.</p>
Move burials	<ul style="list-style-type: none"> • Aboriginal consent and involvement; • Consultants experienced in investigating human remains through excavation and analysis; • AHIP application and at least 6 month lead in time; and • Ongoing consultation with Aboriginal groups. 	<p>Could return positive identification of human remains and/or grave goods, however, remains could have disappeared over time, meaning that site would still be considered a burial by OEH. This avenue would just confirm a positive identification, not disprove it. Would keep burials in a place where Aboriginal groups could have access, but would destroy any original provenance and would be very difficult to replicate old field in new location.</p>	<p>Likely opposition due to massive disturbance and movement, despite ongoing access.</p>
Rous sale of Land	<ul style="list-style-type: none"> • Rous Water would need to ensure future owners of the land are fully appraised of the site, its significance; • Providing this report to future owners; • Appraising the stakeholder groups of the sale; 	<p>The site could potentially remain largely undisturbed, with the stakeholders and LALC negotiating with the new land owners for visitation rights and other cultural matters.</p>	<p>Such low impact outcomes would be fully supported by the stakeholder groups, as long as the future owners were no intent on site development or disturbance.</p>

Action	Requirements	Outcomes	Potential Aboriginal Response
Rous maintaining ownership of land	<ul style="list-style-type: none"> • Rous Water would need to ensure future managers of the land are fully appraised of the site, its significance; • Providing this report to future managers and train them in cultural heritage matters pertaining to the burials; • Appraising the stakeholder groups of the decision and ensure the land manager maintains regular contact with the stakeholders; • A land access agreement between the stakeholders and Rous Water would also be advisable.; 	<p>No development and an ongoing custodial role of the site by Rous Water would be a good option, as Rous Water is well educated as to the site's significance and has an existing relationship with all the Aboriginal stakeholders.</p>	<p>The Aboriginal stakeholder groups would support such a measure as it protects the site under the auspices of a body (Rous Water), all are already familiar with.</p>

Table 23: Burials Management

Management Section B - Indicative Future Management Guidelines

These guidelines are provided in order to allow for Rous Water to have a clearer picture of what may be required during future works or detailed investigation of the dam site prior to such works.

8.11 Initial Recorded Site Management Recommendations

Each site is detailed below providing initial guidelines for its management should the proposed Dunoon Dam proceed, thereby forming a basis for planning and future EIS style investigations. All sites located during the initial survey are listed below, allowing for their interim management, but providing detail for future reporting should works proceed. Some sites below may later be discounted, however, in the interim, management and planning should treat these as sites until such time as Rous Water is advised otherwise. This allows Rous Water to err on the side of caution when managing the sites as future studies are compiled.

S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)

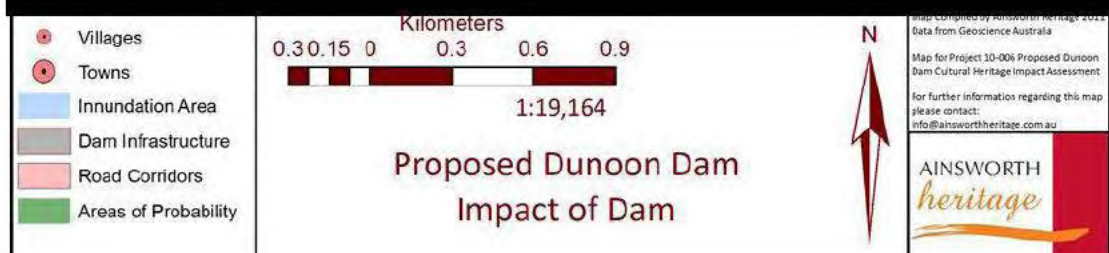


Figure 77: Proposed dam wall sites and infrastructure

8.11.1 Displaced Groove ^{S 14T(5)(b), S 14T(5)(e)}

As this site lies within the ^{S 14T(5)(b), S 14T(5)(e)} and has already been moved from its original location, the following should be undertaken should the proposed dam proceed:

- Recovery of the artefact under a Care Agreement and in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (the Code).

8.11.2 Small Groove ^{S 14T(5)(b), S 14T(5)(e)}

This site lies on the ^{S 14T(5)(b), S 14T(5)(e)}, with the following to be undertaken should the proposed dam proceed:

- Recovery of the artefact under a Care Agreement and in accordance with the Code if the inundation area will cover the artefact.

8.11.3 Hammer and Flake ^{S 14T(5)(b), S 14T(5)(e)}

These sites lie within an area that may be a PAD and should therefore be considered as part of a larger site. The following should be undertaken:

- Test pitting undertaken in their vicinity to determine if a PAD is present;
- Undertaking of additional excavations should a PAD be present and development proceed;
- Recording, reporting and rescuing of materials excavated from the PAD;
- Recovery of the artefacts under a Care Agreement and in accordance with the Code.

8.11.4 Groove ^{S 14T(5)(b), S 14T(5)(e)}

As this site lies within ^{S 14T(5)(b), S 14T(5)(e)}, ^{S14T(5)(b),(e)} it will be severely impacted upon. ^{S14T(5)(b),(e)} The following should be undertaken should the proposed dam proceed:

- Discussion with Aboriginal Stakeholder Groups as to the best methods of recovery for the site;
- Recovery of the artefact, if decided upon, under a Care Agreement and in accordance with the Code.

8.11.5 Sandstone Marker ^{S 14T(5)(b), S 14T(5)(e)}

As a marker for a burial, this artefact should only be moved or disturbed in accordance with the wishes of the Aboriginal Stakeholder Groups. The following actions should be undertaken:

- Consult with the Aboriginal Stakeholder Groups over the best methods for protecting the site;
- Implement these methodologies with the full participation of the Aboriginal Stakeholder Groups.

8.11.6 Blade Core S 14T(5)(b), S 14T(5)(e)

This site lies within an area that may be a PAD and should therefore be considered as part of a larger site. The following should be undertaken:

- Test pitting undertaken in their vicinity to determine if a PAD is present;
- Undertaking of additional excavations should a PAD be present and development proceed;
- Recording, reporting and rescuing of materials excavated from the PAD;
- Recovery of the artefacts under a Care Agreement and in accordance with the Code.

8.11.7 Boulder Scar S 14T(5)(b), S 14T(5)(e)

This site lies within the inundation area, with the following to be undertaken should the proposed dam proceed:

- Recovery of the artefact under a Care Agreement and in accordance with the Code.

8.11.8 Basalt Marker S 14T(5)(b), S 14T(5)(e)

As a marker for a burial, this artefact should only be moved or disturbed in accordance with the wishes of the Aboriginal Stakeholder Groups. The following actions should be undertaken:

- Consult with the Aboriginal Stakeholder Groups over the best methods for protecting the site;
- Implement these methodologies with the full participation of the Aboriginal Stakeholder Groups.

8.11.9 Burials S 14T(5)(b), S 14T(5)(e)

As a collection of burials, this site should only be investigated in accordance with the wishes of the Aboriginal Stakeholder Groups. The following actions should be undertaken:

- Consult with the Aboriginal Stakeholder Groups over the best methods for protecting the site;
- Implement these methodologies with the full participation of the Aboriginal Stakeholder Groups;
- Additionally, this site should not be visited without the attendance of members of the local Aboriginal Community;
- Should investigative excavations be required to determine if human remains are present:
 - The agreement and participation of the local Aboriginal people must be gained;
 - An AHIP will need to be applied for;
 - A series of research questions for the site determined;

- Detailed and fully inclusive consultation will need to be undertaken with all registered Aboriginal Stakeholders;
- Sufficient resources and time will need to be allocated to ensuring that any investigation is undertaken in detail, but with all care and respect;
- Excavations should be limited to only some of the mounds, not all; and
- Should such investigations be seen as necessary, they should only be undertaken following the removal of other Future Water Strategy options from consideration.

Additionally refer to Table 23 for further information and specific management guidelines for the burials.

8.11.10 Deep Scar S 14T(5)(b), S 14T(5)(e)

This tree lies S14T(5)(b),(e) and should be protected with the following:

- The tree should be clearly marked (non-permanently) and surveyed so that ongoing planning can take account of its location;
- Works on the dam wall should seek to avoid the tree wherever possible;
- Should dam works require the removal of the tree, the scarred portion should be recovered as part of any care agreement for the site;
- Any recovered scar, or should the tree remain, could form part of future interpretive works at the site; and
- The site should be re-examined by future reporting to confirm its provenance.

8.11.11 Scar S 14T(5)(b), S 14T(5)(e)

This tree lies S14T(5)(b),(e) and should be protected with the following:

- The tree should be clearly marked (non-permanently) and surveyed so that ongoing planning can take account of its location;
- Works on the dam wall should seek to avoid the tree wherever possible;
- Should dam works require the removal of the tree, the scarred portion should be recovered as part of any care agreement for the site;
- Any recovered scar, or should the tree remain, could form part of future interpretive works at the site; and
- The site should be re-examined by future reporting to confirm its provenance.

8.11.12 Indeterminate Scar S 14T(5)(b), S 14T(5)(e)

This tree lies S14T(5)(b),(e) and should be protected with the following:

- The tree should be clearly marked (non-permanently) and surveyed so that ongoing planning can take account of its location;

- Works on the dam wall should seek to avoid the tree wherever possible;
- Should dam works require the removal of the tree, the scarred portion should be recovered as part of any care agreement for the site;
- Any recovered scar, or should the tree remain, could form part of future interpretive works at the site; and
- The site should be re-examined by future reporting to confirm its provenance.

8.11.13 Basin 1 S 14T(5)(b), S 14T(5)(e)

As this site lies within S 14T(5)(b), S 14T(5)(e), S14T(5)(b),(e) it will be severely impacted upon. However, the groove is part of a larger rock that may be difficult to remove from site. The following should be undertaken should the proposed dam proceed:

- Discussion with Aboriginal Stakeholder Groups as to the best methods of recovery for the site; and
- Recovery of the artefact, if decided upon, under a Care Agreement and in accordance with the Code.

8.11.14 Dual Grooves S 14T(5)(b), S 14T(5)(e)

As this site lies within S 14T(5)(b), S 14T(5)(e), S14T(5)(b),(e) it will be severely impacted upon. However, the groove is part of a larger rock that may be difficult to remove from site. The following should be undertaken should the proposed dam proceed:

- Discussion with Aboriginal Stakeholder Groups as to the best methods of recovery for the site; and
- Recovery of the artefact, if decided upon, under a Care Agreement and in accordance with the Code.

8.11.15 Basin 2 S 14T(5)(b), S 14T(5)(e)

As this site lies within S 14T(5)(b), S 14T(5)(e), S14T(5)(b),(e) it will be severely impacted upon. However, the groove is part of a larger rock that may be difficult to remove from site. The following should be undertaken should the proposed dam proceed:

- Discussion with Aboriginal Stakeholder Groups as to the best methods of recovery for the site; and
- Recovery of the artefact, if decided upon, under a Care Agreement and in accordance with the Code.

8.11.16 Lower Fraser Rd Homestead AHPDD201

The Fraser Road homestead is in good condition and should be recovered from the site prior to any works, or archaeological works commencing for use by either Rous Water or offered for sale.

8.11.17 Sheds AHPDD202

These sheds are of not particular significance and can be removed from site.

8.11.18 Causeway AHPDD203

As an example of depression era works, a section of the causeway could be cut out and used as an interpretive feature at the dam wall, perhaps forming the base of any interpretive areas at the dam wall.

8.11.19 1980s Bridge AHPDD204

This bridge is of not particular significance and can be removed from site.

8.11.20 Possible Camp S14T(5)(b)

Although this site has the potential to be associated with the causeway, there is little chance of any significant archaeology being present. However, when it comes time for removal of the soil from the site, an archaeologist should be present to monitor the site.

Should archaeological features then be found to be present, they should be recorded and removed for later use in any interpretive works.

8.11.21 Footings AHPDD401

The footings are of not particular significance and can be removed from site.

8.11.22 Dairy Bales AHPDD402

The bales are of not particular significance and can be removed from site.

8.11.23 Channon Showgrounds AHPDD501

The showgrounds will likely not be impacted upon by the dam's construction or operations, however, future flood planning will need to take into account any potential impact and advise the grounds managers accordingly.

8.11.24 Abattoir AHPDD502

The abattoir will likely not be impacted upon by the dam's construction or operations, however, future flood planning will need to take into account any potential impact and advise the abattoir's owners accordingly.

8.11.25 Old Rocky Creek Bridge AHPDD503

The bridge will likely not be impacted upon by the dam's construction or operations, however, future flood planning will need to take into account any potential impact and advise the bridges managers accordingly.

8.11.26 Munroe Rd Homestead AHPDD504

The homestead is located on the edge of the environmental buffer zone, and will be impacted from dam construction and operations. Rous Water will need to ensure that all planning for works take into account the homestead's location and seek to mitigate impact on the homestead and its residents, although impact will be unlikely due to the homesteads location.

8.11.27 McPherson Homestead AHPDD505

The homestead is located on the edge of the environmental buffer and will likely see impact from dam construction and operations. Rous Water will need to ensure that all planning for works take into account the homestead's location and seek to mitigate impact on the homestead and its residents, although impact will be unlikely due to the homesteads location.

8.11.28 Whian Whian Falls AHPDD204

The falls, although located beyond the limits of the inundation area, may be impacted by high level flood events that fill the dam to, or beyond, maximum capacity. As such, Rous Water will need to accurately determine the final level for the dam to ensure that the falls are not adversely impacted by the dam's inundation area.

Additionally, Rous Water will need to ensure that dam construction and road use does not impact upon the aesthetic and social significance of the falls, as high traffic volumes of heavy vehicles and destruction of the views and vistas from the falls along Rocky Creek to the west would be an unacceptable impact upon the falls, although impact will be unlikely due to the fall's location.

8.12 Moveable Heritage and Care Agreements

Should objects of Aboriginal heritage significance need to be recovered and removed from the proposed Dam area, during development of any future dam, a Care Agreement will need to be established.

A Care Agreement is a contract between Ngulingah LALC or another Aboriginal Group who will care for the objects and OEH. The Care Agreement should also outline a curatorial policy as discussed in Section 8.2.9.

Statutory Actions: As part of any future dam development, Rous Water will need to consult with the Aboriginal Stakeholder Groups as to how objects are recovered and where they will

be stored. Additionally, all such work will need to be done in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.

8.13 Curatorial Policy

If any work results in the collection of artefacts, a brief Curatorial Policy will need to be established to appropriately manage, care for, store and catalogue the artefacts and be supplied as part of the Care Agreement.

Any future curatorial policy should also be made in line with the Archaeological Materials Deposition Polices¹⁵⁵ and standards that the Australian Museum has produced, especially so if the materials will not be stored on country.

These guidelines can be found here:

<http://australianmuseum.net.au/document/Archaeological-Collection-Deposition-Policy>

Statutory Actions: As part of any future dam development, Rous Water will need to consult with the Aboriginal Stakeholder Groups as to how objects are recovered and where they will be stored. Additionally, all such work will need to be done in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.

8.14 Research Questions

Several research questions for the proposed Dam area have been identified in the course of this assessment, but should not be considered an exhaustive list. Consultation with the Registered Aboriginal Stakeholders, other archaeologists and OEH should be considered when developing further research questions.

Some examples of further research questions are:

- How does the proposed Dam area demonstrate the use of a specific resource zones within the larger Bundjalung Cultural Landscape?;
- Do the types of sites and their distribution support the oral history of the routes used to access the Tucki Tucki - Wollumbin route and the other **S14T(5)(b)** in the area?; and
- Can the proposed Dam area demonstrate alone and as part of the larger Bundjalung Cultural Landscape, the interrelation of these areas through the archaeological record?

Statutory Actions: Ensure that any future sub-surface archaeological investigation on site is undertaken in a way that incorporates well constructed research questions which will contribute to a greater understanding of the archaeology of the local and regional areas.

¹⁵⁵ Australian Museum. 2012. Protocols for the Deposition of Archaeological Materials. Australian Museum, Sydney.

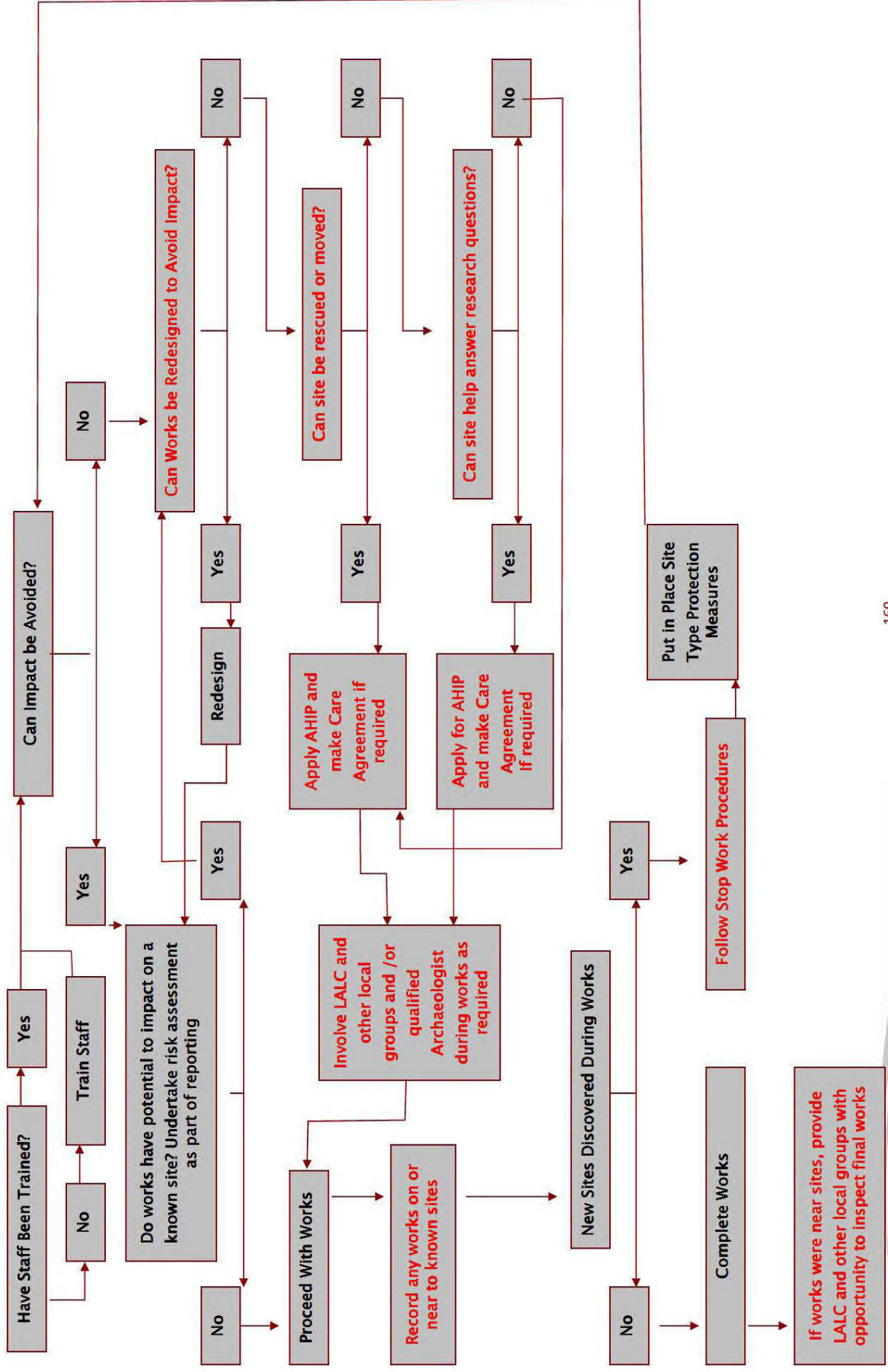
8.15 Infrastructure Re-Alignment

Within the S14T(5)(b),(e) [REDACTED]
[REDACTED] Although the [REDACTED] will likely be disturbed (702, 703, 303), 701 and 601, 602 and 603 can be protected by limited realignment of infrastructure away from each site and careful works planning and monitoring.

Recommended Actions: Ensure that future redesigns of the proposed dam wall area avoid the known sites and that's works procedures provide for monitoring and training for staff working near by.

8.16 Cultural Heritage Management Flow Chart

This flow chart is designed to assist those undertaking works within the proposed Dunoon Dam in managing impact upon cultural heritage significance. Text in RED denotes the need for specialist advice.



9.0 CONCLUSION

The proposed Dunoon Dam is a major regional water supply infrastructure project that is likely to be considered as State Significant Infrastructure under the EP&A Act. Any project undertaken in NSW with the potential to impact cultural heritage is subject to NSW legislation i.e. EP&A Act and NPW Act. As such, the major heritage requirements for any development of the proposed Dam are those relating to Aboriginal heritage and would be guided by OEHS's recommendations to the Director General of Planning NSW, which would follow standard OEHS requirements.

Local Aboriginal stakeholders have been identified and consulted through a year long process, started through contact with Government Departments for information regarding groups and followed by newspaper advertisements, direct mail and phone calls to determine those stakeholders who wished to be involved. Eventually, five groups and several individuals were identified, with some being highly involved in the process, whilst others were happy to merely be kept apprised of the ongoing process. The consultation process has been inclusive and rigorous and has gone beyond that required by OEHS for such processes.

The current study has identified a number of significant Aboriginal cultural heritage values and sites. These include: the burials (25) located as a group in [REDACTED] of the proposed dam site; several stone artefacts; scarred trees; and grinding grooves. The most significant site located was the burial ground, with the other sites not rare in their own right, but contributing to the picture of Aboriginal use of the valley over time.

The additional investigations into the burials, determined that the site has a high probability of being a burial ground, therefore any future work that disturbs the burial site will require, an AHIP permit, if not undertaken as part of works under Part 5.1 of the EP&A Act, as the site is now registered with AHIMS. In order to disturb the site, appropriate research questions and detailed consultation, undertaken by a qualified Archaeologist and with full participation of the registered stakeholders, would be required. Such a research excavation will need to be sufficiently resourced and provided with adequate time, to ensure that the excavation is undertaken in detail, but with all care and respect. This course of action should only be undertaken should Rous Water determine that the proposed Dunoon Dam is required to secure regional water supply security.

Aboriginal stakeholders are of the opinion that the sites should remain undisturbed and that no level of disturbance is considered acceptable to them, especially when concerned with impacts upon the burials, which they see serving as a direct link to the ancestors of the registered stakeholders. The other sites located are also considered significant as a collection, showing a clear pattern of use for the valley by Aboriginal people over time.

Should Rous Water wish to seek statutory approval to construct and operate the proposed Dunoon Dam, it would need to satisfy the Director-General as to whether the impact on heritage by the proposed dam is considered acceptable. The strong views of the Aboriginal community and the findings of this and any future heritage reports would also be taken into account.

Rous Water should continue to consult with the registered Aboriginal stakeholders with regards to all ongoing facets of not only the proposed Dunoon Dam, but also in the ongoing Future Water Strategy. This consultation should take place at least every six months, to ensure that any future review of consultation regarding the proposed dam will consider consultation to have been ongoing and unbroken, therefore not requiring a restart of the process. Additionally, Rous Water needs to be aware that additional cultural information

may be made available in future and that this information should be considered as fully as the information in this report was.

Non-Aboriginal heritage within the proposed dam site which would see high impact has been determined to be of little or no significance, and presents no impediment to any future plans for the site. However, in order for Rous Water to continue to fulfil Best Practice, the management recommendations for individual sites should be followed during any potential development.

However, should Rous Water decide to proceed with development of the dam, the following processes are seen as the most likely, but other may come into play as time progresses:

Based on the findings of this study, it is the opinion of Ainsworth Heritage that there remains a considerable risk that the Director General of Planning NSW may not approve the proposed development on heritage grounds based on the clearly expressed views of the local Aboriginal people with regards to the cultural heritage of the site, especially the burials. This is further reinforced through the usual divisions of some of the stakeholders who participated in the community consultation, who despite their past differences, held similar views with regards to the protection of sites, in particular, the burials.

Ainsworth Heritage would recommend that the burials not be disturbed again until such time as all other Future Water Strategy development pathways have completed their own feasibility studies. Should it be found that the other options for water supply in the region are unfeasible or will not meet demand, then investigation of the dam could recommence, with the burials becoming one of the primary constraining features and all work undertaken with the full inclusion of all Aboriginal stakeholders.

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<http://www.richhistory.org.au/district-history-dairy.htm> Henderson, M. no date. *Downturn at the Dairy (Part 5)*. Accessed 6/1/2011.

<http://www.legislation.nsw.gov.au/viewtop/inforce>. Accessed 05-08-2010.

Appendix A

Consultation Details

Consultation Log

Date	In/Out	From	To	Type	Notes
16/11/2011	IN	S 14T(3)(a)	Matt Alexander	Phone Call	Would like to be put on Stakeholders list and provide feedback on final report.
31/10/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Arranging to meet for oral history meeting with S 14T(3)(a)
31/10/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Arranging to meet for oral history meeting with S 14T(3)(a)
27/10/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Arranging to meet for oral history meeting with S 14T(3)(a)
27/10/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Arranging to meet for oral history meeting with S 14T(3)(a)
18/10/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Arranged for site visit for 25/10/2011
18/10/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Arranged for site visit for 25/10/2011
18/10/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Arranged for site visit for 25/10/2011
11/8/2011	OUT	Matt Alexander	Canowinda Tweed Byron Aged and Disabled Aboriginal Corporation	Phone Call	Request For Draft Report Meeting
11/8/2011	OUT	Matt Alexander	Minjungbal Culture Museum	Phone Call	Request For Draft Report Meeting
11/8/2011	OUT	Matt Alexander	Bundjalung Tribal Society	Phone Call	Request For Draft Report Meeting
11/8/2011	OUT	Matt Alexander	Ngulingah Local Aboriginal Land Council	Phone Call	Request For Draft Report Meeting
11/8/2011	OUT	Matt Alexander	Widjabul People Native Title Claimants	Phone Call	Request For Draft Report Meeting
11/8/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Request For Draft Report Meeting
18/7/2011	OUT	Matt Alexander	Canowinda Tweed Byron Aged and Disabled Aboriginal Corporation	Letter	Draft Report and Request For Meeting

Date	In/Out	From	To	Type	Notes
18/7/2011	OUT	Matt Alexander	Minjungbal Culture Museum	Letter	Draft Report and Request For Meeting
18/7/2011	OUT	Matt Alexander	Bundjalung Tribal Society	Letter	Draft Report and Request For Meeting
18/7/2011	OUT	Matt Alexander	Ngulingah Local Aboriginal Land Council	Letter	Draft Report and Request For Meeting
18/7/2011	OUT	Matt Alexander	Widjabul People Native Title Claimants	Letter	Draft Report and Request For Meeting
18/7/2011	OUT	Matt Alexander	S 14T(3)(a)	Letter	Draft Report and Request For Meeting
6/12/2010	OUT	The Native Title Services Corporation Limited (NTSCORP Limited);	Matt Alexander	Letter	Response to request for details on Aboriginal Groups
29/03/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Called S 14T(3)(a) to talk about grooves found near wall and options for the burial site
24/03/2011	OUT	Matt Alexander	Canowinda Tweed Byron Aged and Disabled Aboriginal Corporation	Letter	Burials Letter
24/03/2011	OUT	Matt Alexander	Midjungbal Culture Museum	Letter	Burials Letter
24/03/2011	OUT	Matt Alexander	Bundjalung Tribal Society	Letter	Burials Letter
24/03/2011	OUT	Matt Alexander	Ngulingah Local Aboriginal Land Council	Letter	Burials Letter
24/03/2011	OUT	Matt Alexander	Widjabul People Native Title Claimants	Letter	Burials Letter
24/03/2011	OUT	Matt Alexander	S 14T(3)(a)	Letter	Burials Letter
					Missed Phone Call from S 14T(3)(a) the previous Friday and returned call at 9:50am Monday. S 14T(3)(a) did not remember leaving message, but mentioned having met with Widjabul Mob. Asked if he wished to discuss material for the report, but he stated that he did not have anything to add at present. Agreed to talk again later.
7/03/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	
1/03/2011	OUT	Matt Alexander	S 14T(3)(a)	Email	Fieldwork details for S 14T(3)(a) Due to S 14T(3)(a) missing the main consultation meeting due to hospital and the second arranged meeting due to going to Sydney, it was agreed that all meeting material would be sent to S 14T(3)(a)
21/02/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	

Date	In/Out	From	To	Type	Notes
					would go over this and then get back to Ainsworth Heritage with his thoughts and views.
9/02/2011	OUT	Matt Alexander	S 14T(3)(a)	Email	Results of Consultation meetings as S 14T(3)(a) could not attend
8/02/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Due to S 14T(3)(a) missing the main consultation meeting due to hospital a new meeting was arranged for the 21st of January.
1/02/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Spoke with reception. S 14T(3)(a) in meeting, she would call back.
1/02/2011	IN	Canowinda	Matt Alexander	Email	Advise on contact for Canowinda
1/02/2011	OUT	Matt Alexander	Canowinda	Email	Results of Consultation meetings
1/02/2011	OUT	Matt Alexander	Bundjalung Tribal Council	Email	Results of Consultation meetings
31/01/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Spoke with S 14T(3)(a) who was in hospital, would call back next week.
28/01/2011	OUT	Matt Alexander	S 14T(3)(a)	Email	Meeting information for S 14T(3)(a) (Ngulingah deputy chair)
21/01/2011	OUT	Matt Alexander	Canowinda	Phone Call	Called Canowinda about consultation. Administrator is away to the 24th of January. Will call the Administrator on the 24th to discuss.
21/01/2011	OUT	Matt Alexander	Bundjalung Tribal Council	Phone Call	Called Bundjalung Tribal Council about consultation. Manager is away to the 30th of January but are happy to hear from Ngulingah regarding the process. Will call the manager on the 31st to discuss.
21/01/2011	OUT	Matt Alexander	Bundjalung Tribal Council	Phone Call	Spoke with S 14T(3)(a) (Manager Bundjalung Tribal Council) who asked for the information and was happy we had talked with Ngulingah. Would respond once up to speed.
21/01/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Called Ngulingah LALC as no response received. Spoke with S 14T(3)(a) who asked that material be emailed across. Did so straight away.
21/01/2011	OUT	Matt Alexander	Midjinbul Museum	Phone Call	Called Midjinbul Museum about consultation and spoke to S 14T(3)(a). Have only just reopened and need to read letters. Will call back 26th to discuss.
21/01/2011	OUT	Matt Alexander	Durahwa	Phone Call	Called Durahwa about consultation and spoke to Secretary. Manager will call back to discuss if interested.
21/01/2011	OUT	Matt Alexander	S 14T(3)(a)	Email	Sent over consultation information as S 14T(3)(a) did not have it to hand

Date	In/Out	From	To	Type	Notes
15/01/2011	OUT	Matt Alexander	Canowinda Tweed Byron Aged and Disabled Aboriginal Corporation	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Burubi Aboriginal Corporation	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Midjungbal Culture Museum	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Tweed Aboriginal Co-operative Society Ltd	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Bundjalung Elders Council Aboriginal Council	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Bundjalung Tribal Society	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Burra:Waj:Ad	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Durahwa Training and Development Aboriginal Corporation	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Banjaling Aboriginal Corporation	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Baryulgil Square Co-operative Society Limited	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Collum Collum Aboriginal Corporation	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Ngulingah Local Aboriginal Land Council	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	Widiabul People Native Title Claimants	Letter	Second consultation request letter
15/01/2011	OUT	Matt Alexander	S 14T(3)(a)	Letter	Second consultation request letter
					Spoke with S 14T(3)(a) regarding the site and its potential for materials. S 14T(3)(a) looked forward to meeting with Rous Water and also expressed his desire for a detailed and comprehensive report and history of the site to be provided. Has examined the general area in the past and has knowledge regarding sites in and around the area.
11/01/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	Spoke with S 14T(3)(a) who had knowledge of the local area through ancestors who were moved from
11/01/2011	OUT	Matt Alexander	S 14T(3)(a)	Phone Call	

Date	In/Out	From	To	Type	Notes
					a mission near Dunoon to near Lismore. Let § 14T(3)(a) know of the meeting and also let him know that a letter would be on the way to him today with project details and meeting time.
7/01/2011	IN	§ 14T(3)(a)	Matt Alexander	Email	Advised that § 14T(3)(a) would be attending consultation
29/12/2010	OUT	The National Native Title Tribunal	Matt Alexander	Letter	Response to request for details on Aboriginal Groups
15/12/2010	OUT	Matt Alexander	Canowinda Tweed Byron Aged and Disabled Aboriginal Corporation	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Burabi Aboriginal Corporation	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Midjungbal Culture Museum	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Tweed Aboriginal Co-operative Society Ltd	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Bundjalung Elders Council Aboriginal Council	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Bundjalung Tribal Society	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Burra:Waj:Ad	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Durahwa Training and Development Aboriginal Corporation	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Banjaling Aboriginal Corporation	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Baryulil Square Co-operative Society Limited	Letter	Initial consultation request letter

Date	In/Out	From	To	Type	Notes
15/12/2010	OUT	Matt Alexander	Collum Collum Aboriginal Corporation	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Ngulingah Local Aboriginal Land Council	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	Widjabul People Native Title Claimants	Letter	Initial consultation request letter
15/12/2010	OUT	Matt Alexander	§ 141(3)(a)	Letter	Initial consultation request letter
6/12/2010	OUT	The Registrar, Aboriginal Land Rights Act 1983	Matt Alexander	Letter	Response to request for details on Aboriginal Groups
3/12/2010	OUT	The DECCW EPRG regional office in Coffs Harbour;	Matt Alexander	Letter	Response to request for details on Aboriginal Groups
30/11/2010	OUT	The Northern Rivers Catchment Management Authority	Matt Alexander	Letter	Response to request for details on Aboriginal Groups
29/11/2010	OUT	Matt Alexander	The DECCW EPRG regional office in Coffs Harbour;	Letter	Request for details on Aboriginal Groups
29/11/2010	OUT	Matt Alexander	The Ngulingah Local Aboriginal Land Council;	Letter	Request for details on Aboriginal Groups
29/11/2010	OUT	Matt Alexander	The Registrar, Aboriginal Land Rights Act 1983	Letter	Request for details on Aboriginal Groups
29/11/2010	OUT	Matt Alexander	The National Native Title Tribunal	Letter	Request for details on Aboriginal Groups
29/11/2010	OUT	Matt Alexander	The Native Title Services Corporation Limited (NTSCORP Limited);	Letter	Request for details on Aboriginal Groups
29/11/2010	OUT	Matt Alexander	Lismore City Council	Letter	Request for details on Aboriginal Groups
29/11/2010	OUT	Matt Alexander	The Northern Rivers Catchment Management Authority	Letter	Request for details on Aboriginal Groups

Letter to Government Departments (Modified as needed for each department)

Dear Sir/Maam,

Re: Proposed Dunoon Dam Cultural Heritage Impact Assessment

I am writing on behalf of Rous Water, as proponent, in regards to the Proposed Dunoon Dam Cultural Heritage Impact Assessment. This letter is the formal request for information regarding potential Aboriginal Owners and Groups for:

S 14T(3)(a), S 14T(5)(b)

[REDACTED]

Rous Water is seeking input from Aboriginal parties or individuals who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation with regards to the Proposed Dunoon Dam Cultural Heritage Impact Assessment. The land in question covers approximately 445 hectares along Rocky Creek, between the villages of Dunoon and the Channon, northern NSW. The consideration of the viability of the dam involves an integrated Aboriginal and non-Aboriginal heritage assessment and survey, for the purposes of evaluating the proposed dam's potential impact on any sites, places, or objects of cultural heritage significance. It is one of several studies currently being undertaken with the aim of determining whether the Proposed Dunoon Dam is a viable option to be adopted as part of the Future Water Strategy. The purpose of community consultation with local Aboriginal People is to assist Rous Water in determining the viability of the proposed dam and the best methods of avoiding and/or mitigating impact upon Aboriginal Cultural Heritage in the project area, should the dam be adopted as part of the Future Water Strategy and of determining future management strategies for Aboriginal Cultural Heritage in the Proposed Dunoon Dam project area. It should be noted, that this study does not form part of an Environmental Impact Assessment.

Any information regarding Aboriginal owners in the area will only be used in the course of community consultation regarding the site.

Please address any return correspondence to Ainsworth Heritage, who are acting on behalf of the proponent, Rous Water, to:

Matt Alexander
Ainsworth Heritage
PO Box 385
Billinudgel, NSW, 2483

Regards

S 14T(3)(a), S 14T(3)(b)

Matt Alexander

Initial Consultation Request Letter

To whom it may concern,

Re: Proposed Dunoon Dam Cultural Heritage Impact Assessment

I am writing on behalf of Rous Water, as proponent, in regards to the Proposed Dunoon Dam Cultural Heritage Impact Assessment. This letter is the formal invitation for representatives of Canowinda Tweed Byron Aged and Disabled Aboriginal Corporation to attend an Aboriginal Community Consultation meeting regarding the project. We are sending a second round of letters to known local Aboriginal Groups due to the Christmas/New Years period, in order to make sure we provide each group with the opportunity to respond.

Rous Water would like to include as stakeholders, those who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the Proposed Dunoon Dam, west of Dunoon, NSW, to register an interest in the process of community consultation with regards to the a Cultural Heritage Impact Assessment.

The land in question covers approximately 445 hectares along Rocky Creek, between the villages of Dunoon and The Channon. The project involves an integrated Aboriginal and non-Aboriginal heritage assessment and survey, for the purposes of evaluating the proposed dam's potential impact on any sites, places, or objects of cultural heritage significance.

Rous Water is seeking input from Aboriginal parties or individuals who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation with regards to the Proposed Dunoon Dam Cultural Heritage Impact Assessment. The land in question covers approximately 445 hectares along Rocky Creek, between the villages of Dunoon and the Channon, northern NSW.

The consideration of the viability of the dam involves an integrated Aboriginal and non-Aboriginal heritage assessment and survey, for the purposes of evaluating the proposed dam's potential impact on any sites, places, or objects of cultural heritage significance. It is one of several studies currently being undertaken with the aim of determining whether the Proposed Dunoon Dam is a viable option to be adopted as part of the Future Water Strategy. The purpose of community consultation with local Aboriginal People is to assist Rous Water in determining the viability of the proposed dam and the best methods of avoiding and/or mitigating impact upon Aboriginal Cultural Heritage in the project area, should the dam be adopted as part of the Future Water Strategy and of determining future management strategies for Aboriginal Cultural Heritage in the Proposed Dunoon Dam project area. It should be noted, that this study does not form part of an Environmental Impact Assessment.

Both Matt Alexander and Jane Ainsworth of Ainsworth Heritage, the consultants engaged by Rous Water for the project, and representatives from Rous Water, will be attending the meeting. We would like to discuss the local Aboriginal People's thoughts about the project, its scope and current plan, what you would like to see the

report cover and include and what you would like to see in the final results of the assessment.

The meeting is scheduled for Monday, 31 January 2011, in the Rous water Offices, Level 4, 218-232 Molesworth Street, Lismore, from 10am.

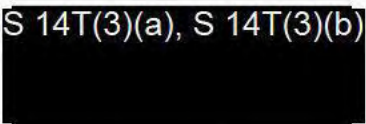
If you could contact Matt Alexander, of Ainsworth Heritage, on (02) 6680 2548 or, matta@ainsworthheritage.com.au or, PO Box 385, Billinudgel, NSW, 2483, no later than Close Of Business 21 January 2011, to advise of your groups intention to register, if at all, as a stakeholder and to provide details of attendees, it would be greatly appreciated.

Additionally, any items you would like to see discussed during the meeting should also be communicated to me for inclusion in the agenda by close of business 21 January 2011.

Please do not hesitate to contact me should you require any further information, or if you would like to discuss any other matters regarding the project.

Regards

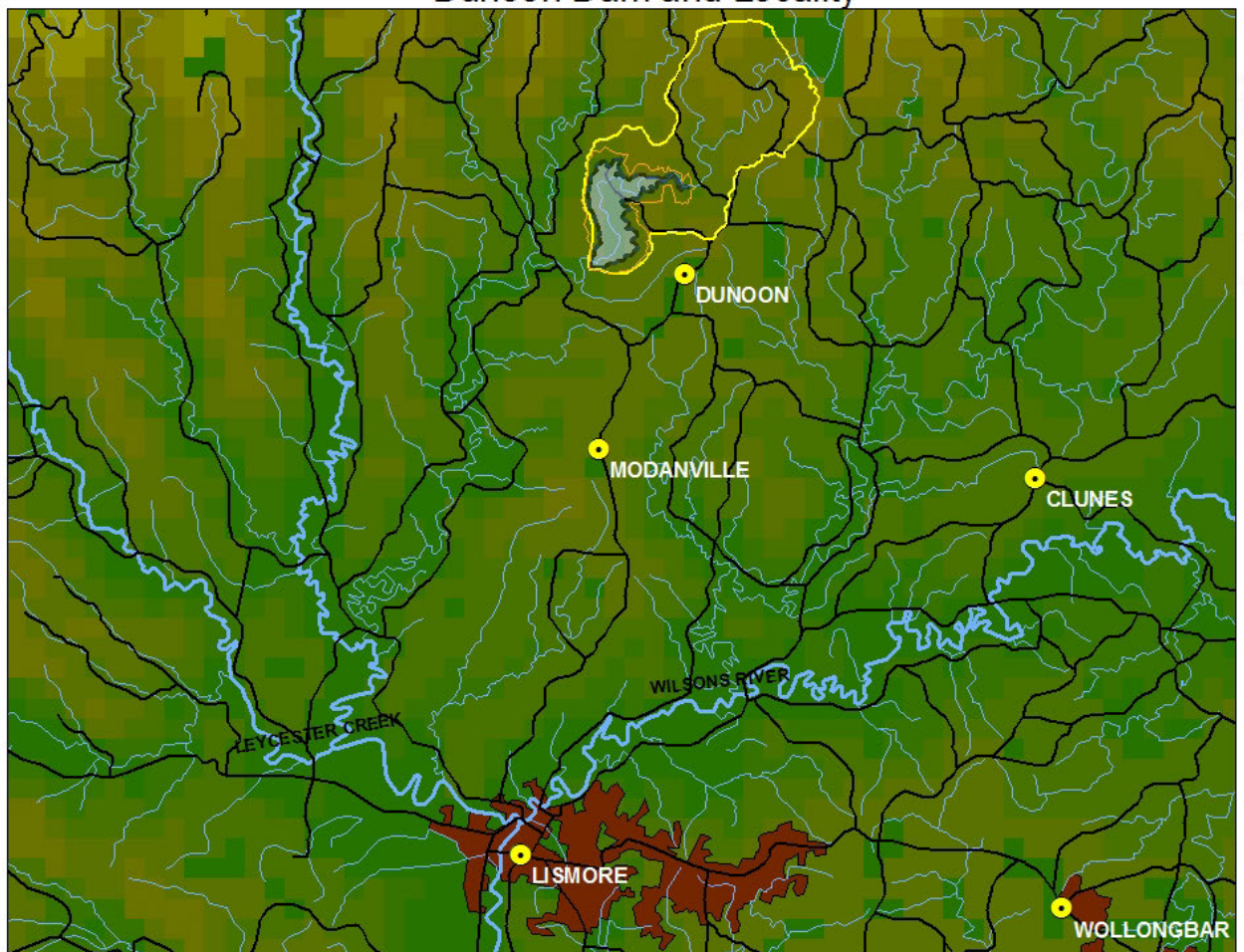
S 14T(3)(a), S 14T(3)(b)

A black rectangular redaction box covers the signature area of the letter.

Matt Alexander

Maps provided with Consultation Letters

Dunoon Dam and Locality

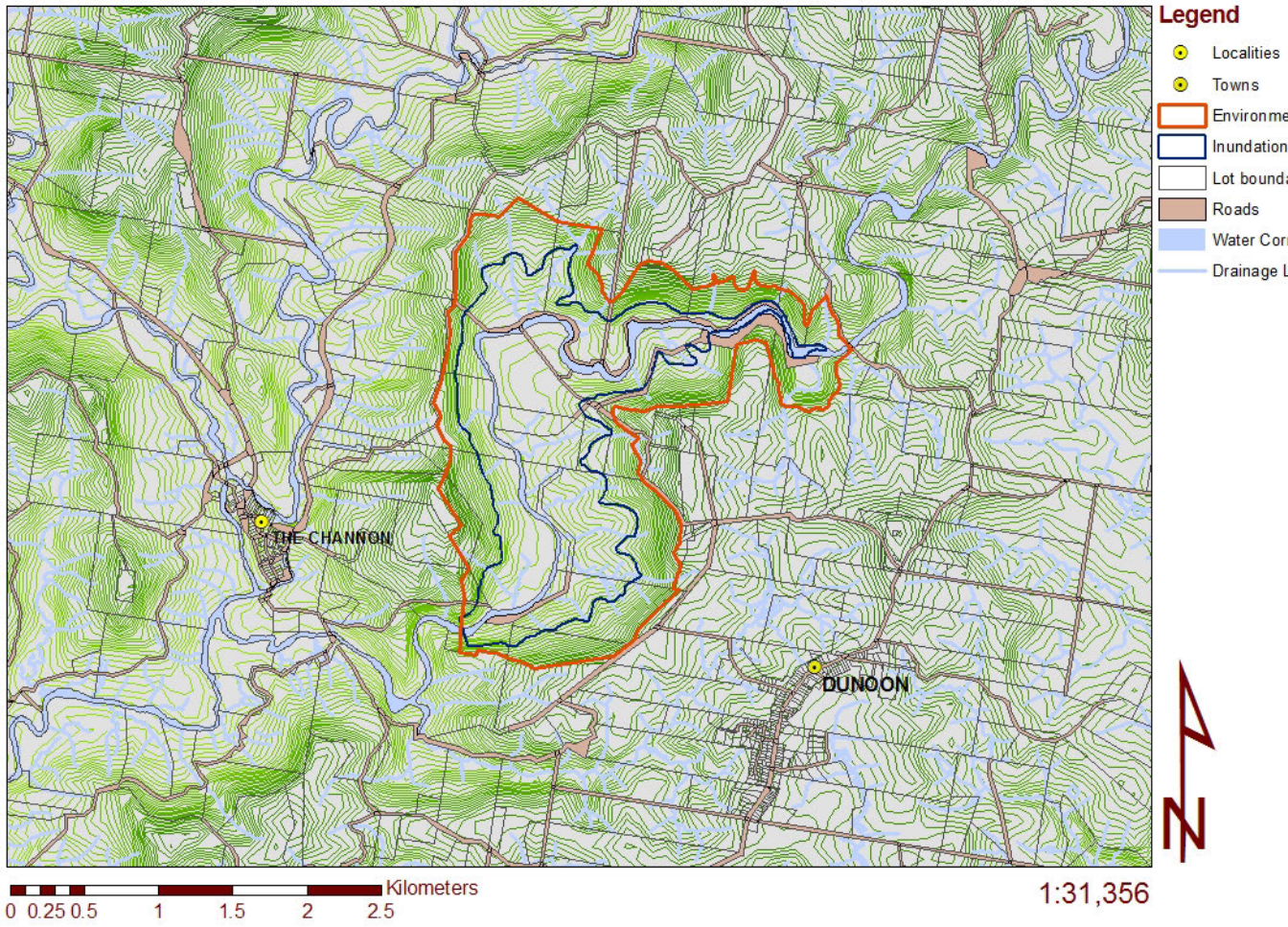


- Legend**
- Towns
 - Inund
 - Enviro
 - Dam
 - Roads
 - Rivers
 - Creek
 - Urban

Kilometers
0 0.5 1 2 3 4 5

1:125,000

Dunoon Dam and Locality





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Request for Interested Aboriginal Parties – Proposed Dunoon Dam Cultural Heritage Impact Assessment

Rous Water, as proponent, is seeking input from interested Aboriginal parties, or individuals, who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the Proposed Dunoon Dam, west of Dunoon, NSW, to register an interest in the process of community consultation with regards to the a Cultural Heritage Impact Assessment. The land in question covers approximately 445 hectares along Rocky Creek, between the villages of Dunoon and the Channon. The project involves an integrated Aboriginal and non-Aboriginal heritage assessment and survey, for the purposes of evaluating the proposed dam's potential impact on any sites, places, or objects of cultural heritage significance.

It is one of several studies currently being undertaken with the aim of determining whether the Proposed Dunoon Dam is a viable option to be adopted as part of the Future Water Strategy. The purpose of community consultation with local Aboriginal People is to assist Rous Water in determining the viability of the proposed dam and the best methods of avoiding and/or mitigating impact upon Aboriginal Cultural Heritage in the project area, should the dam be adopted as part of Rous Water's long term water supply strategy and of determining future management strategies for Aboriginal Cultural Heritage in the Proposed Dunoon Dam project area. It should be noted, that this study does not form part of an Environmental Impact Assessment.

Those Aboriginal Parties or Individuals wishing to take part in community consultation regarding the project should contact Matt Alexander, of Ainsworth Heritage, who are acting on behalf of Rous Water, on (02) 6680 2548 or, matta@ainsworthheritage.com.au or, PO Box 385, Billinudgel, NSW, 2483, no later than **Close Of Business 21 January 2011.**

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**Request for Interested Aboriginal
Parties -
Proposed Dunoon Dam Cultural
Heritage Impact Assessment**

Rous Water, as proponent, is seeking input from interested Aboriginal parties, or individuals, who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the Proposed Dunoon Dam, west of Dunoon, NSW, to register an interest in the process of community consultation with regards to the a Cultural Heritage Impact Assessment. The land in question covers approximately 445 hectares along Rocky Creek, between the villages of Dunoon and the Channon. The project involves an integrated Aboriginal and non-Aboriginal heritage assessment and survey, for the purposes of evaluating the proposed dam's potential impact on any sites, places, or objects of cultural heritage significance. The purpose of community consultation with local Aboriginal People is to assist Rous Water in determining the viability of the proposed dam and the best methods of avoiding and/or mitigating impact upon Aboriginal Cultural Heritage in the project area and of determining future management strategies for Aboriginal Cultural Heritage in the Proposed Dunoon Dam project area. It should be noted, that this study does not form part of an Environmental Impact Assessment. Those Aboriginal Parties or Individuals wishing to take part in community consultation regarding the project should contact Ainsworth Heritage, who are acting on behalf of Rous Water, on (02) 6680 2548 or, matta@ainsworthheritage.com.au or, PO Box 385, Billinudgel, NSW, 2483, no later than Close Of Business 21 January 2011.

Burial Notification Letter

Re: Proposed Dunoon Dam Cultural Heritage Impact Assessment

I am writing on behalf of Rous Water, the proponent, in regards to the Proposed Dunoon Dam Cultural Heritage Impact Assessment, of which the group you represented registered interest as a stakeholder. During the recent preliminary field survey of the site, undertaken in conjunction with members of the Ngulingah Local Aboriginal Land Council and Widjabul Native Title Group, several sites were identified, one of which Rous Water believes registered stakeholders should be made aware of immediately.

The site is located **S 14T(5)(b), S 14T(5)(e)**, [REDACTED]

which both the Ngulingah sites officer and Rous Water's consultants (Ainsworth Heritage) believe to be of Aboriginal origin. Details regarding the site are attached on separate sheet.

Although a full Draft Heritage Impact Assessment is being prepared and will be provided to each registered Aboriginal group for comment in early May, Rous Water feels that due to the potential high significance of the multiple burials at the site, the registered Aboriginal stakeholder groups need to be informed about this site now. This will enable the groups to have plenty of time to discuss the find and develop ideas for managing this site, prior to the Draft Report being prepared.

Over the next two months the full draft Heritage Impact Assessment, which will be written in accordance with the current DECCW best practice guidelines, will be produced. It will discuss the history and cultural heritage of the proposed dam site and will outline to Rous Water the best methods for the management and protection of the cultural heritage sites in the area of the proposed dam.

The report will be produced in draft form in early May and will be sent to each registered Aboriginal group. Following that, a meeting to discuss the draft report will be held in early June, with details for that meeting to be provided at a later date.

Please note that at this time, the Dunoon Dam is only a proposed project and Rous Water has not made a decision as whether it will proceed to develop the dam or not. Any decision to proceed with the dam will not be made until all preliminary studies, investigations and consultation on a range of issues have been completed. Furthermore, the current Heritage Assessment is a preliminary study that seeks to determine sites and areas of significance for further investigation and to seek ways of protecting and preserving those sites in cooperation with the local Aboriginal Peoples.

With regards to the determination of the rarity and significance of the site, Rous Water would also like to request assistance from registered stakeholders in determining the rarity of the site. Should registered stakeholders have knowledge of other such burial sites in the region, information regarding their number and general locality would be greatly appreciated. However, Rous Water understands the

important nature of these sites and does not request exact details or locations of the sites.

Should you have any questions regarding the site in question, please feel free to contact either Matt Alexander at Ainsworth Heritage (02 6680 2548), or Rob Cawley at Rous Water (02 6621 8055).

Regards

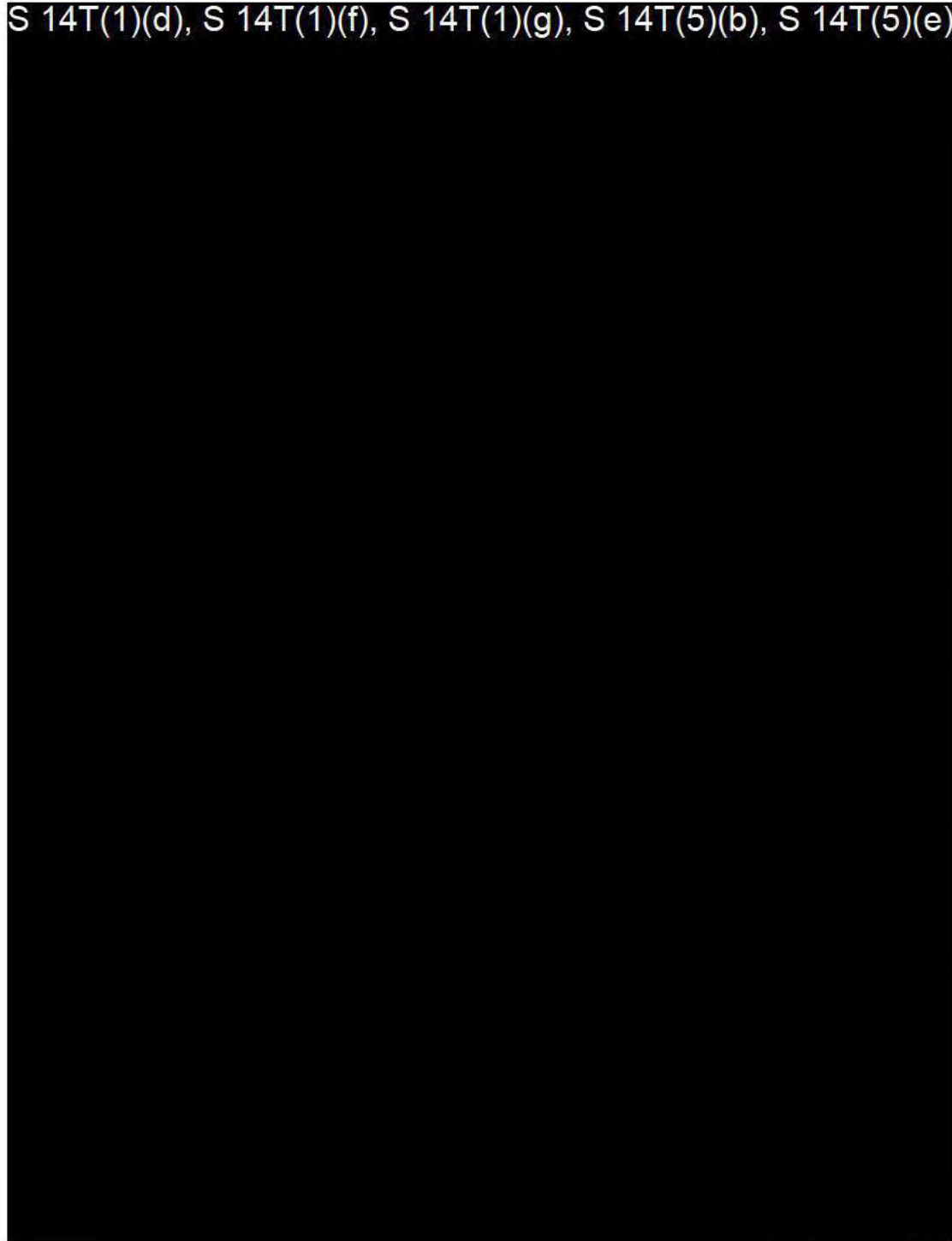
S 14T(3)(a), S 14T(3)(b)

Matt Alexander

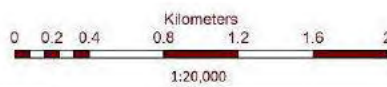
Information provided with letters regarding burials

Site Location and Details for Potential Aboriginal Burial Site at S 14T(5)(b), S 14T(5)(e)

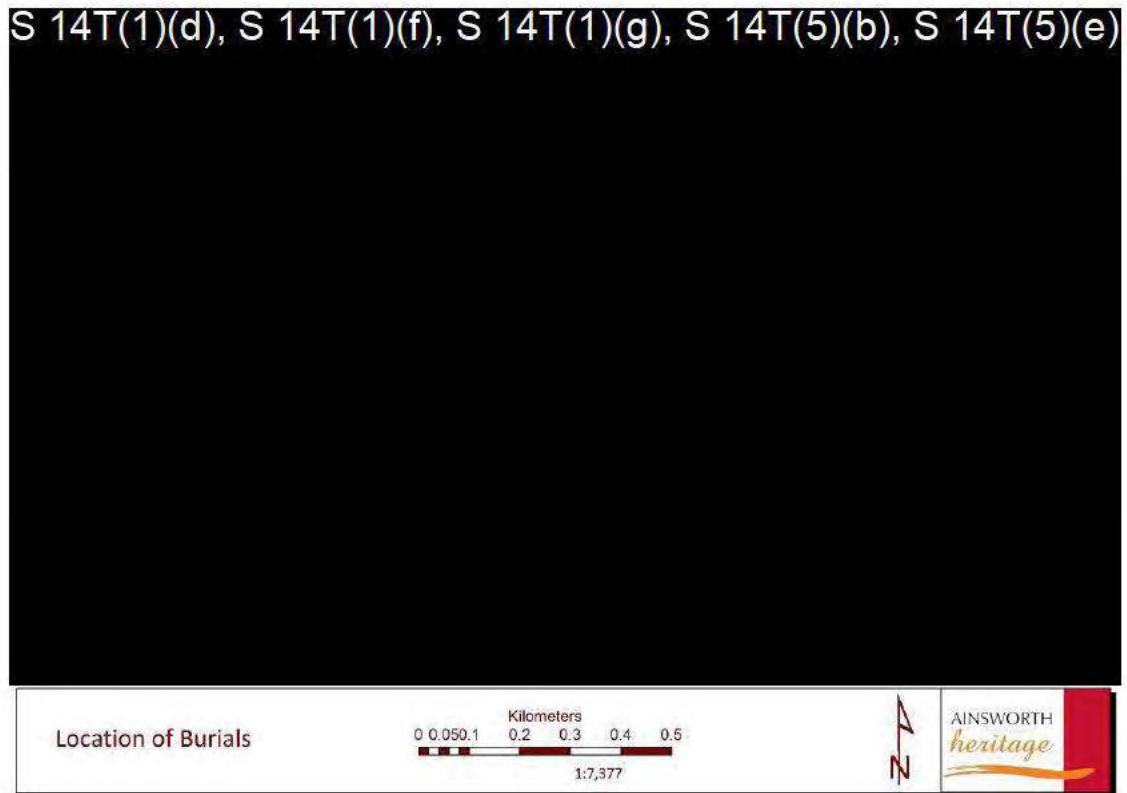
S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)



Location of Burials



S 14T(1)(d), S 14T(1)(f), S 14T(1)(g), S 14T(5)(b), S 14T(5)(e)



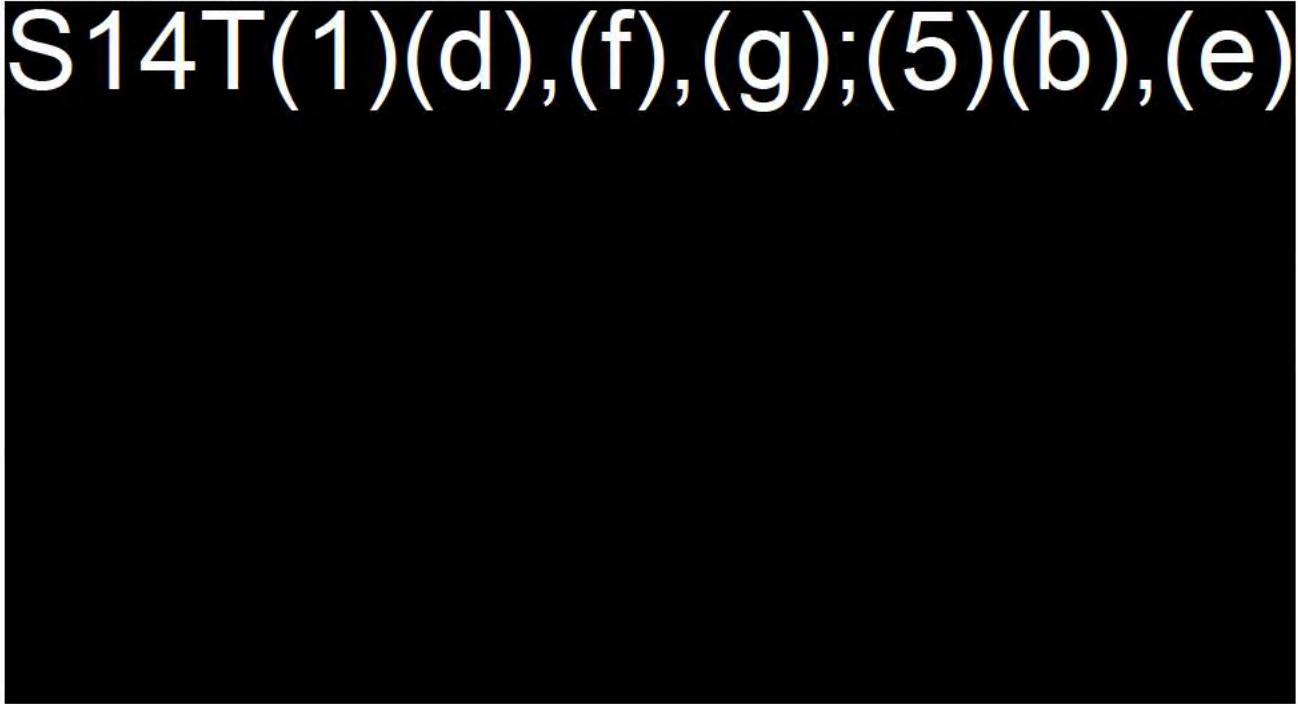
The site is located S 14T(5)(b), S 14T(5)(e), [redacted]. The environment the site is located in consists of heavy regrowth and difficult sloped terrain. Access to the site from S 14T(5)(b), S 14T(5)(e) [redacted].

There are 15 separate rock piles, with two being located very close together (N & O). All the stone piles are oriented north\south except for G, which faces east/west. The pile range in height from 20 to 50cm and have the following dimensions:

Stone Pile	Length (meters)	Breadth (meters)	Alignment
A	2	1.5	North/South
B	1.5	1.5	North/South
C	1.5	2	North/South
D	2.5	1.4	North/South
E	2.2	1.5	North/South
F	2.2	1.5	North/South
G	1.4	0.95	East/West
H	1.4	1.3	North/South
I	1.5	1.9	North/South
J	1.5	1.2	North/South
K	1	0.9	North/South
L	1.8	0.9	North/South
M	1.5	1.4	North/South
N	2	1.1	North/South
O	1.5	0.9	North/South

Rough layout diagram of Site

S14T(1)(d),(f),(g);(5)(b),(e)



Re: Draft Proposed Dunoon Dam Cultural Heritage Impact Assessment

I am writing on behalf of Rous Water, as proponent, in regards to the Draft Proposed Dunoon Dam Cultural Heritage Impact Assessment. This letter is the formal invitation for representatives of Canowinda Tweed Byron Aged and Disabled Aboriginal Corporation, as a registered stakeholder, to attend an Aboriginal Community Consultation meeting regarding the Draft Cultural Heritage Impact Assessment.

The land in question covers approximately 445 hectares along Rocky Creek, between the villages of Dunoon and The Channon. The project involves an integrated Aboriginal and non-Aboriginal heritage assessment and survey, for the purposes of evaluating the proposed dam's potential impact on any sites, places, or objects of cultural heritage significance.

The consideration of the viability of the dam involves an integrated Aboriginal and non-Aboriginal heritage assessment and survey, for the purposes of evaluating the proposed dam's potential impact on any sites, places, or objects of cultural heritage significance. It is one of several studies currently being undertaken with the aim of determining whether the Proposed Dunoon Dam is a viable option to be adopted as part of the Future Water Strategy.

Rous Water is seeking input and advice from the registered Aboriginal Groups on the draft assessment and its findings and recommendations, with all such advice included in the final report. The draft assessment is attached in both hard and digital form and has been sent to each registered Aboriginal Group.

Following a four week review period, Rous Water would like to hold a meeting with the registered Aboriginal Groups regarding the draft assessment. Rous water has scheduled the meeting for Thursday August 18th, 2011 at the Rous Water Offices, Level 4, 218/232 Molesworth Street, Lismore at 10am.

Matt Alexander and Jane Ainsworth of Ainsworth Heritage, the consultants engaged by Rous Water for the project, and representatives from Rous Water, will be attending the meeting. We would like to discuss the local Aboriginal People's thoughts about the project, its scope and current plan, what you would like to see the assessment further include and cover and what you would like to see in the final results of the assessment.

Concerning the determination of the rarity and significance of the sites located, Rous Water would also like to request assistance from registered stakeholders in determining the rarity of these sites and their significance to the local Aboriginal Peoples. Should registered stakeholders have knowledge of other such sites in the region, information regarding their number and general significance would be greatly appreciated. However, Rous Water understands the important nature of these sites and does not request exact details or locations of the sites.

Please note that at this time, the Dunoon Dam is only a proposed project and Rous Water has not made a decision as whether it will proceed to develop the dam or not. Any decision to proceed with the dam will not be made until all preliminary studies, investigations and consultation on a range of issues have been completed. Furthermore, the current Heritage Assessment is a preliminary study that seeks to determine sites and areas of significance for further investigation and to seek ways of protecting and preserving those sites in cooperation with the local Aboriginal Peoples.

Should you have any questions regarding the assessment or the meeting, please feel free to contact either Matt Alexander at Ainsworth Heritage (02 6680 2548), or Rob Cawley at Rous Water (02 6621 8055).

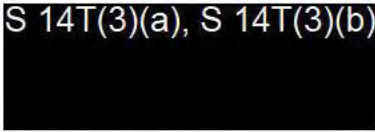
If you could contact Matt Alexander, of Ainsworth Heritage, on (02) 6680 2548 or, matta@ainsworthheritage.com.au or, PO Box 385, Billinudgel, NSW, 2483, no later than Close Of Business 16 August 2011, to advise of your groups intention to attend the meeting, if at all, it would be greatly appreciated.

Additionally, any items you would like to see discussed during the meeting should also be communicated to me for inclusion in the agenda by close of business 18 August 2011.

Please do not hesitate to contact me should you require any further information, or if you would like to discuss any other matters regarding the project.

Regards

S 14T(3)(a), S 14T(3)(b)

A black rectangular redaction box covers the signature area, with the text 'S 14T(3)(a), S 14T(3)(b)' printed in white at the top left of the box.

Matt Alexander

Appendix B

Site Cards

Appendix C

Hobb's Burial Report

Only to be reproduced with the permission of the Aboriginal Groups.

Appendix D

Rous Water Analysis of Lower Dam Wall Heights on Water Storage Capacity

ROUS REGIONAL WATER SUPPLY

Program: JOUS6DN5.BAS

TABLE 1 Preliminary Modelled Results (Similar to Draft Environmental Flow Rules V2)

Operating Rule 5/10/20% applied – Restriction duration 5%, Frequency of Restriction 1 in 10 years and demand reduced by 20%

Run No.	Rocky Creek Dam and Emigrant Creek Dam	Dunoon Dam Storage (ML)	Transfer from Wilsons River Sources (ML/a)	Dunoon Dam Transparent Releases (ML/d)	Secure Yield ML/a	Restriction				Critical Drought	
						Applied at Storage (%)	Duration (%)	1 in x year	From	To	
J52	Yes	50000	No	150 ^{*2}	21600	50	2.57	56.00	21/04/1911	28/02/1919	
J61	Yes	16600 ^{*1}	No	150 ^{*2}	15100	65	3.99	11.20	12/09/1901	26/02/1903	

*1 – Dunoon Dam storage volume at 65m AHD

*2 – based on inflow derived from Rocky Creek Dam inflow by the equation $y = 0.7303x$

NOTES

(1) Streamflows (Period of simulation 01/01/1892 to 31/12/2003)

Daily inflows to Rocky Creek Dam, Emigrant Creek Dam, and Dunoon Dam are supplied by DNR

(2) Monthly Demand Pattern and % of Annual Demand

Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	% Share of Annual Demand
(A) Lismore													
Lismore (Holland St)	11.1	7.7	7.8	6.8	7.3	6.8	8.0	7.8	8.8	9.4	8.5	10.0	4.1
Lismore Urban	9.3	7.7	8.2	7.0	7.3	7.6	7.5	8.2	8.9	9.7	8.6	10.0	25.4
(B) Byron Bay													
Byron Bay	11.8	7.9	8.1	7.1	7.1	6.5	7.2	7.3	8.1	9.6	8.9	10.4	15.8
Ocean Shores	11.6	8.3	7.9	7.5	7.8	7.4	7.0	7.4	7.8	9.2	7.9	10.1	6.3
(C) Richmond River													
Coraki	10.7	9.2	8.5	7.3	7.2	6.2	7.0	7.9	8.3	9.5	8.1	10.1	3.1
Lower River	13.1	7.7	7.9	7.1	6.8	6.9	7.3	6.8	8.1	9.6	7.8	11.0	4.3

(D) Ballina	12.1	8.0	8.1	7.2	7.4	7.0	7.3	7.3	8.2	9.2	8.1	10.2	26.7
(E) Rural & Losses													
Clunes Rural	11.4	10.9	12.7	9.8	8.4	8.8	7.1	5.2	6.6	6.9	5.9	6.4	1.2
Bangalow	11.0	7.3	8.2	7.4	7.5	7.1	6.8	7.2	8.5	10.0	8.7	10.3	6.7
Dunoon	11.0	7.7	7.2	6.6	7.0	6.1	7.9	8.4	8.7	10.7	8.3	10.4	1.6
Alstonville	10.8	6.6	7.2	6.4	8.0	8.4	8.2	8.8	8.6	9.3	8.1	9.6	5.0

Daily demand is equal to the monthly demand divided by the number of days in the month

(3) Transfer capacity

Emigrant Creek Dam maximum transfer capacity at 7.5 ML/d between 1 November and end of February annually

(4) Environmental Flow Release from the Storages

No releases other than Bishop's modified Low flow protection release for Emigrant Creek Dam and No releases from Rocky Creek Dam
Transparent Release from Dunoon Dam for 150, 100ML/d

(5) Dam Storage and leakage

Storage in dam:	Full storage ML	Dead storage ML	Leakage ML/d
Rocky Creek Dam	14000	150	1.15
Emigrant Creek Dam	820	50	0.23
Dunoon Dam	50000/16600	4800	0.263